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JUN 05 2019

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM022080
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY LP		8. Lease Name and Well No. TOMB RAIDER 12-1 FED 701H 322/867
3a. Address 333 West Sheridan Avenue Oklahoma City OK 73102	3b. Phone No. (include area code) (800)583-3866	9. API Well No. 30-015-46096
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SWSW / 250 FSL / 230 FWL / LAT 32.312387 / LONG -103.7392828 At proposed prod. zone LOT 4 / 20 FNL / 725 FWL / LAT 32.3406678 / LONG -103.7377085		10. Field and Pool, or Exploratory WC-015 G-08, S233102C / WOLFCAMP
11. Sec., T. R. M. or Blk. and Survey or Area SEC 12 / T23S / R31E / NMP		12. County or Parish EDDY
13. State NM		
14. Distance in miles and direction from nearest town or post office*		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 250 feet	16. No of acres in lease 1280	17. Spacing Unit dedicated to this well 640
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 421 feet	19. Proposed Depth 11820 feet / 22083 feet	20. BLM/BIA Bond No. in file FED: CO1104
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3488 feet	22. Approximate date work will start* 06/19/2019	23. Estimated duration 45 days
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) Jenny Harms / Ph: (405)552-6560	Date 12/14/2018
Title Regulatory Compliance Professional		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 05/24/2019
Title Assistant Field Manager Lands & Minerals		
Office CARLSBAD		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

APPROVED WITH CONDITIONS
Approval Date: 05/24/2019

RUB 6-14-19

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM connects this information to an evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

1. SHL: SWSW / 250 FSL / 230 FWL / TWSP: 23S / RANGE: 31E / SECTION: 12 / LAT: 32.312387 / LONG: -103.7392828 (TVD: 0 feet, MD: 0 feet)
PPP: SWSW / 100 FSL / 725 FWL / TWSP: 23S / RANGE: 31E / SECTION: 12 / LAT: 32.311967 / LONG: -103.737685 (TVD: 1481 feet, MD: 11506 feet)
BHL: LOT 4 / 20 FNL / 725 FWL / TWSP: 23S / RANGE: 31E / SECTION: 1 / LAT: 32.3406678 / LONG: -103.7377085 (TVD: 11820 feet, MD: 22083 feet)

BLM Point of Contact

Name: Candy Vigil
Title: Admin Support Assistant
Phone: 5752345982
Email: cvigil@blm.gov

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Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

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PECOS DISTRICT

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company LP
LEASE NO.:	NMNM022080
WELL NAME & NO.:	Tomb Raider 12-1 Fed 701H
SURFACE HOLE FOOTAGE:	250'/S & 230'/W
BOTTOM HOLE FOOTAGE:	20'/N & 725'/W
LOCATION:	Section 12, T.23 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input type="radio"/> None	<input type="radio"/> Secretary	<input checked="" type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input type="radio"/> Multibowl	<input checked="" type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input checked="" type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input type="checkbox"/> Unit

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

Primary Casing Design:

1. The **10-3/4** inch surface casing shall be set at approximately **826 feet** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the 7-5/8 inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Operator has proposed to pump down 10-3/4" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" casing to surface. Submit results to BLM.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
Cement excess is less than 25%, more cement might be required.

Alternate Casing Design:

4. The **13-3/8** inch surface casing shall be set at approximately **826 feet** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - e. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - f. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - g. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - h. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

5. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- c. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- d. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Operator has proposed to pump down 13-3/8" X 8-5/8" annulus. Operator must run a CBL from TD of the 8-5/8" casing to surface. Submit results to BLM.

Operator is approved to drill a 9.875" hole for intermediate 1 with TLW connection.

6. The minimum required fill of cement behind the 5-1/2 inch production casing is:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
Cement excess is less than 25%, more cement might be required.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi**.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **5000 (5M) psi**.

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi**.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.

- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612.

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the

plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Devon Energy Production Company LP
WELL NAME & NO.:	Tomb Raider 12-1 Fed 701H
SURFACE HOLE FOOTAGE:	250'/S & 230'/W
BOTTOM HOLE FOOTAGE:	20'/N & 725'/W
LOCATION:	Section 12, T.23 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

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- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
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 - Lesser Prairie-Chicken Timing Stipulations
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 - Range
 - Potash
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 - Topsoil
 - Closed Loop System
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I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Build as you Go Pads; No Grading full Proposed Pad!!

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period.

Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Timing Limitation Exceptions:

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Avian Power Line Protection:

Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. The holder

without liability or expense shall make such modifications and/or additions to the United States.

Hydrology

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas,

wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

Livestock Watering Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

Fence Requirement

Where entry is granted across a fence line, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

The operator must contact the allotment holder prior to construction to identify the location of the pipeline. The operator must take measures to protect the pipeline from compression or other damages. If the pipeline is damaged or compromised in any way near the proposed project as a result of oil and gas activity, the operator is responsible for repairing the pipeline immediately. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

During construction, the proponent shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. The proponent is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the grazing permittee/allottee prior to disturbing any range improvement projects. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

Lessees must comply with the 2012 Secretarial Potash Order. The Order is designed to manage the efficient development of oil, gas, and potash resources. Section 6 of the Order provides general provisions which must be followed to minimize conflict between the industries and ensure the safety of operations.

To minimize impacts to potash resources, the proposed well is confined within the boundaries of the established Tomb Raider 12-1 Drill Island (See Potash Memo and Map in attached file for Drill Island description).

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS**Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

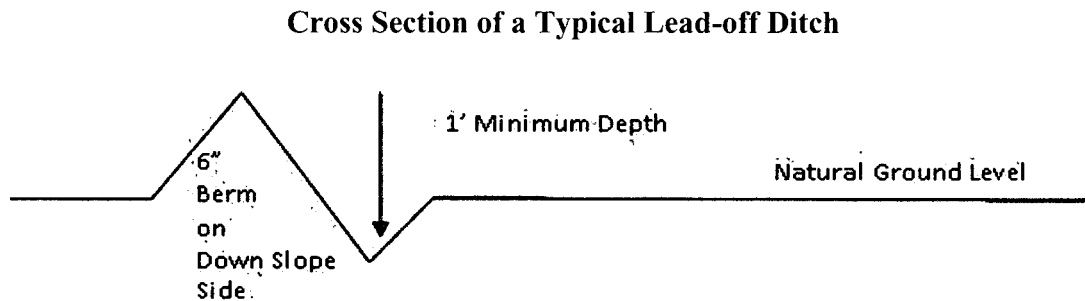
Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

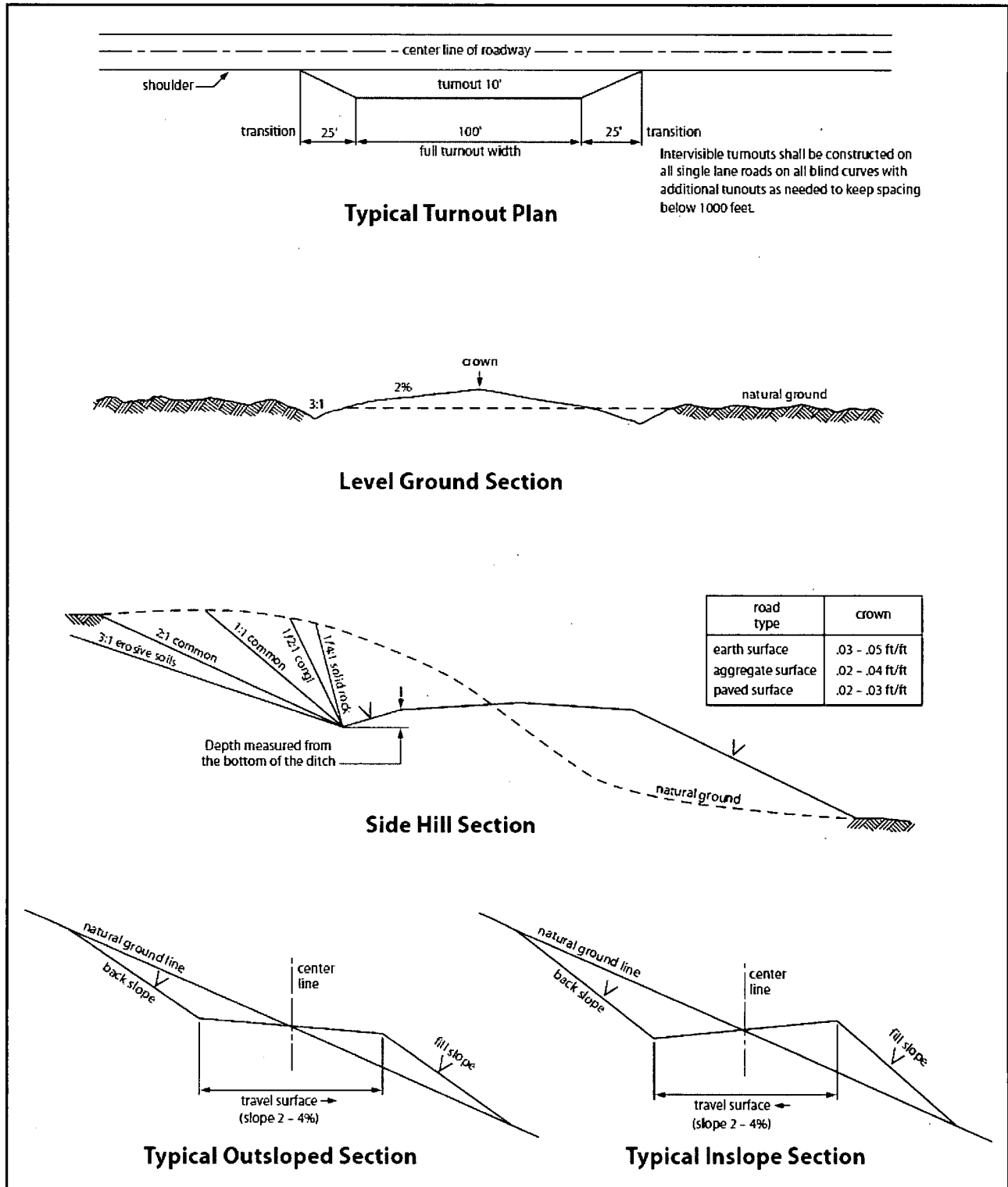


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to

whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (Blading is defined as the complete removal of brush and ground vegetation.)
- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.)
- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (Compressing can be caused by vehicle tires, placement of equipment, etc.)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The

holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

- | | |
|--|--|
| <input type="checkbox"/> seed mixture 1 | <input type="checkbox"/> seed mixture 3 |
| <input type="checkbox"/> seed mixture 2 | <input type="checkbox"/> seed mixture 4 |
| <input checked="" type="checkbox"/> seed mixture 2/LPC | <input type="checkbox"/> Aplomado Falcon Mixture |

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – Shale Green, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the

Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

19. Special Stipulations:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.
5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be

allowed within up to 200 meters of leaks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

05/30/2019

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Jenny Harms

Signed on: 12/14/2018

Title: Regulatory Compliance Professional

Street Address: 333 W Sheridan Ave

City: Oklahoma City

State: OK

Zip: 73102

Phone: (405)552-6560

Email address: jenny.harms@dvn.com

Field Representative

Representative Name: Ray Vaz

Street Address: 333 WEST SHERIDAN AVENUE

City: OKLAHOMA CITY

State: OK

Zip: 73102-5015

Phone: (405)552-4902

Email address: ray.vaz@dvn.com



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data Report

05/30/2019

APD ID: 10400037318

Submission Date: 12/14/2018

Highlighted data
reflects the most
recent changes

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400037318

Tie to previous NOS?

Submission Date: 12/14/2018

BLM Office: CARLSBAD

User: Jenny Harms

Title: Regulatory Compliance
Professional

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM022080

Lease Acres: 1280

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: DEVON ENERGY PRODUCTION COMPANY LP

Operator letter of designation:

Operator Info

Operator Organization Name: DEVON ENERGY PRODUCTION COMPANY LP

Operator Address: 333 West Sheridan Avenue

Zip: 73102

Operator PO Box:

Operator City: Oklahoma City State: OK

Operator Phone: (800)583-3866

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WC-015 G-08
S233102C

Pool Name: WOLFCAMP

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Is the proposed well in an area containing other mineral resources? POTASH

Describe other minerals:

Is the proposed well in a Helium production area? N Use Existing Well Pad? YES New surface disturbance? Y

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name: TOMB Number: 2

Well Class: HORIZONTAL

RAIDER 12 PAD

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town:

Distance to nearest well: 421 FT

Distance to lease line: 250 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: TOMB_RAIDER_12_1_FED_701H_C102_20181214091644.pdf

Well work start Date: 06/19/2019

Duration: 45 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number: 6671

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	250	FSL	230	FWL	23S	31E	12	Aliquot SWS W	32.31238 7	- 103.7392 828	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	348 8	0	0
KOP Leg #1	50	FSL	725	FWL	23S	31E	12	Aliquot SWS W	32.31183	- 103.7376 84	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 775 9	112 64	112 47
PPP Leg #1	100	FSL	725	FWL	23S	31E	12	Aliquot SWS W	32.31196 7	- 103.7376 85	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	200 7	115 06	148 1

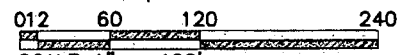
Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	100	FNL	725	FWL	23S	31E	1	Lot 4	32.34044 8	- 103.7377 09	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 833 2	220 03	118 20
BHL Leg #1	20	FNL	725	FWL	23S	31E	1	Lot 4	32.34066 78	- 103.7377 085	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 833 2	220 83	118 20

SITE MAP



DIRECTIONS TO LOCATION

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 12-1 FED 701H

LOCATED 250 FT. FROM THE SOUTH LINE
AND 230 FT. FROM THE WEST LINE OF
SECTION 12, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

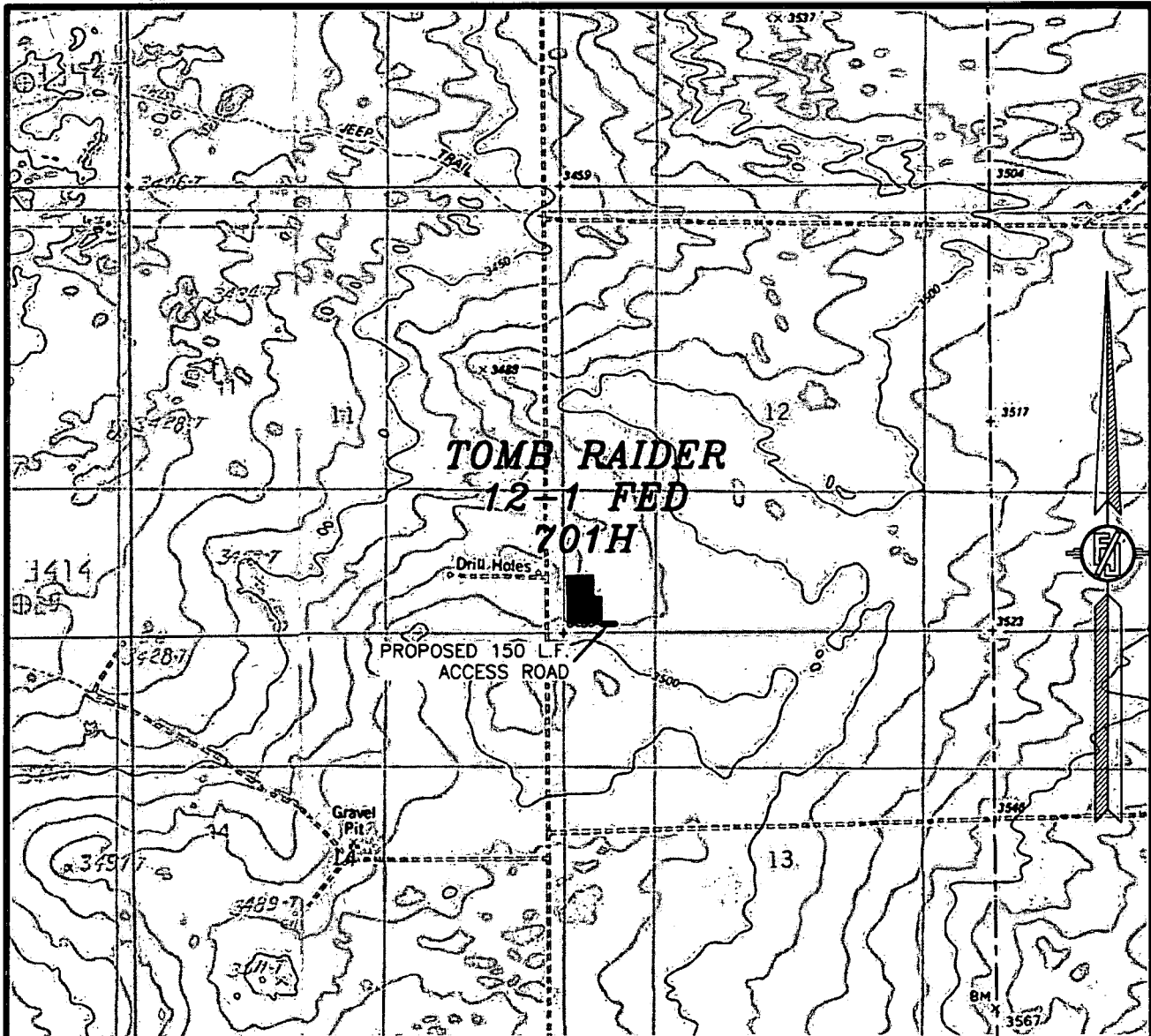
SURVEY NO. 6671

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 **CARLSBAD, NEW MEXICO**

301 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 **CARLSBAD, NEW MEXICO**

SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
BOOTLEG RIDGE

NOT TO SCALE

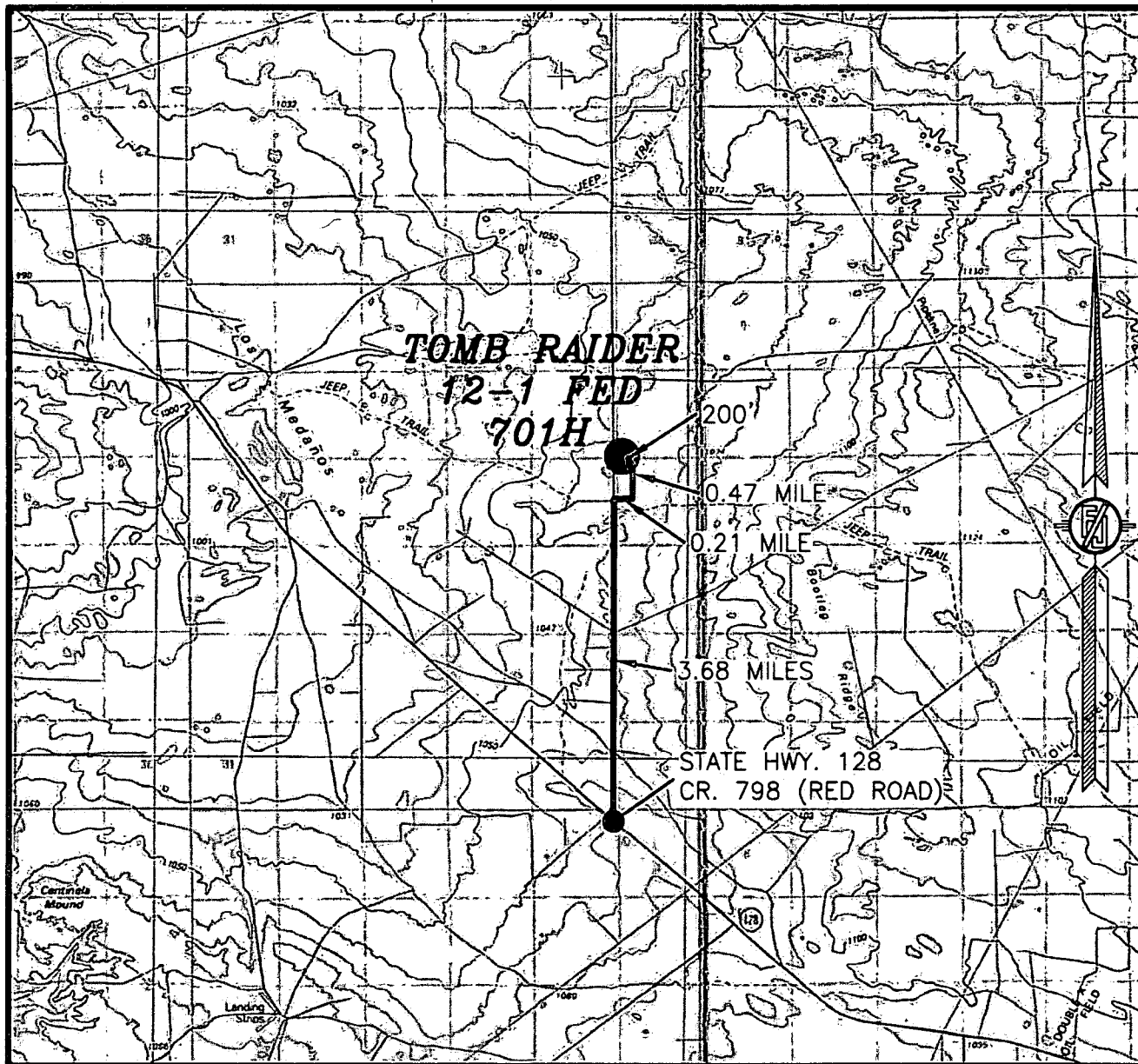
DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 12-1 FED 701H
LOCATED 250 FT. FROM THE SOUTH LINE
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RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6671

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF STATE HIGHWAY 128 AND CR 798 (RED ROAD) GO NORTH ON CR 798 FOR APPROX. 3.68 MILES, TURN RIGHT ON CALICHE ROAD AND GO EAST APPROX. 0.21 OF A MILE, TURN LEFT GO NORTH APPROX. 0.47 OF A MILE, TURN LEFT GO WEST 200' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 12-1 FED 701H

LOCATED 250 FT. FROM THE SOUTH LINE
AND 230 FT. FROM THE WEST LINE OF
SECTION 12, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6671

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

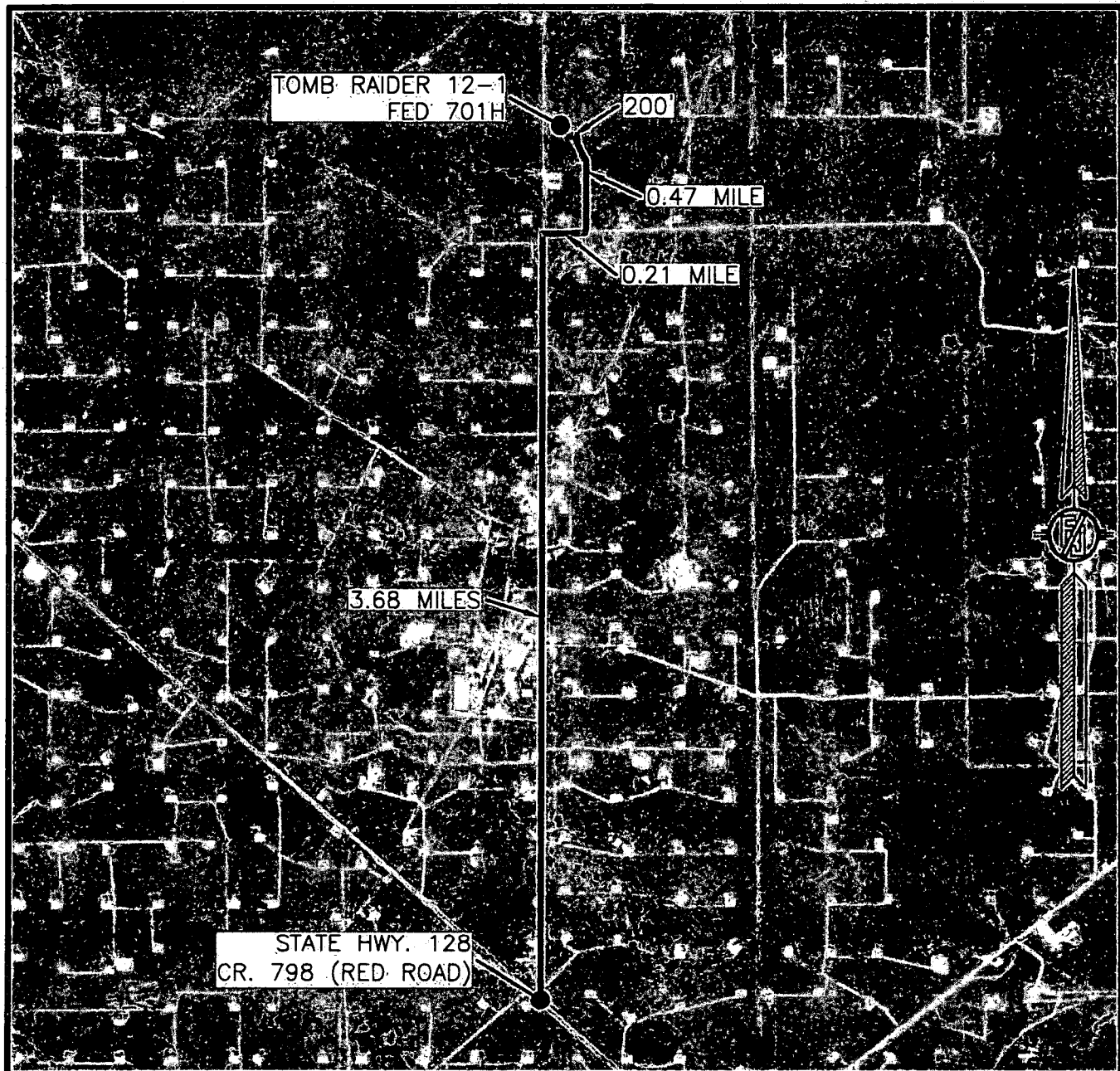
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RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6671

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

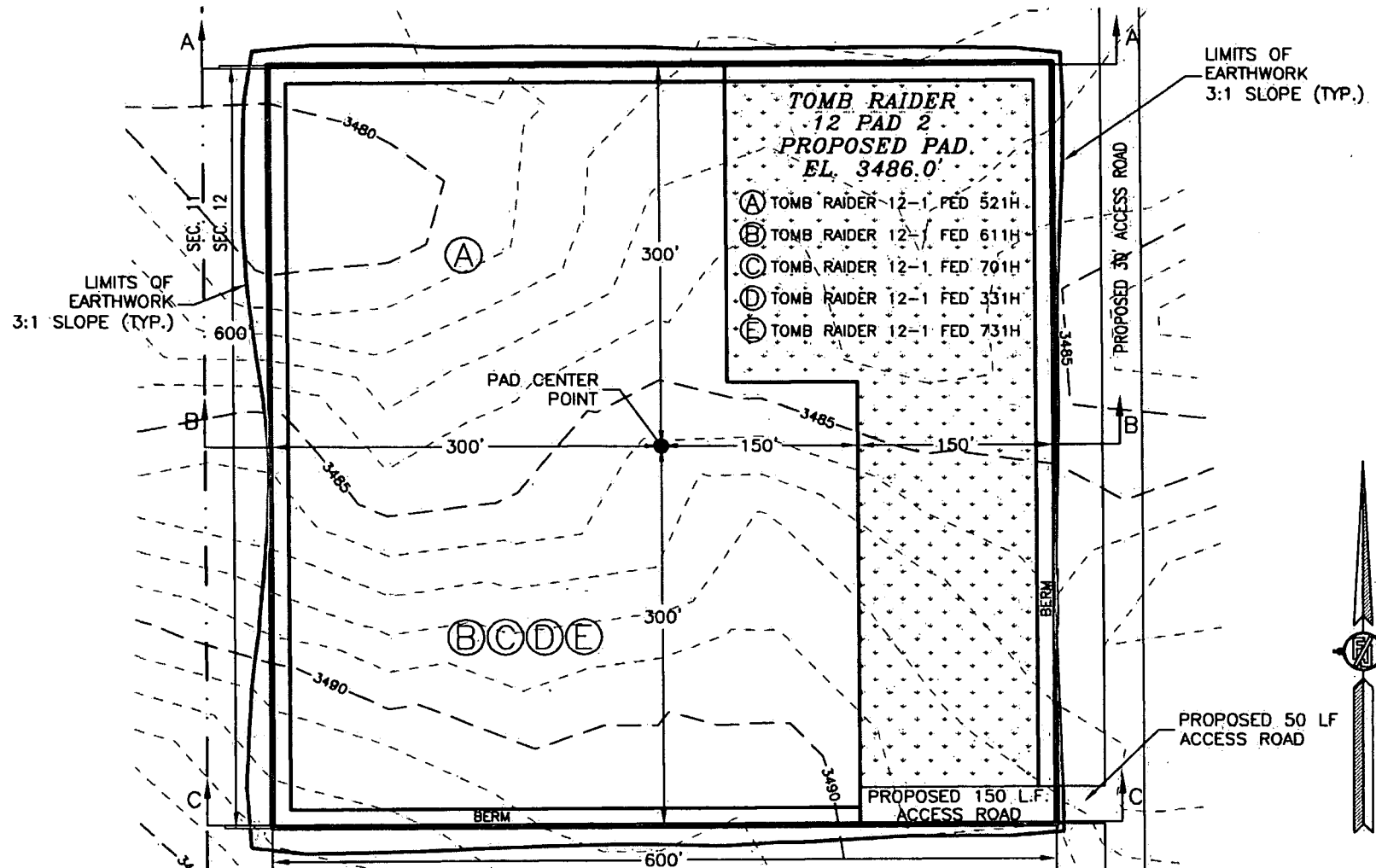
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EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6671

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

PLAN VIEW



DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
FOR TOMB RAIDER 12-1 FED 701H
SECTION 12, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

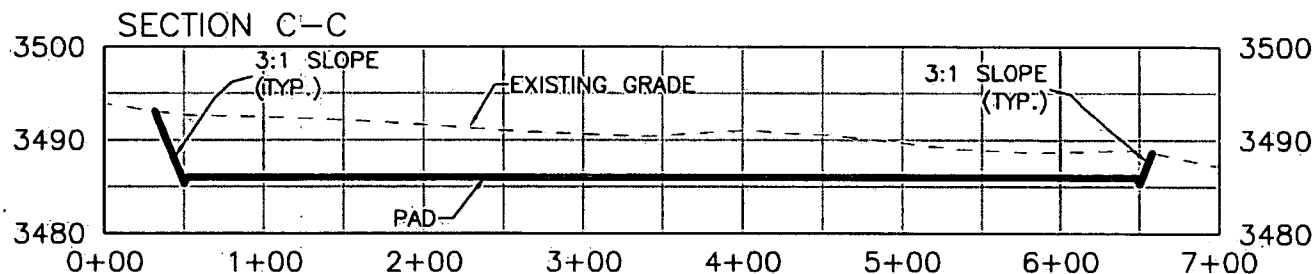
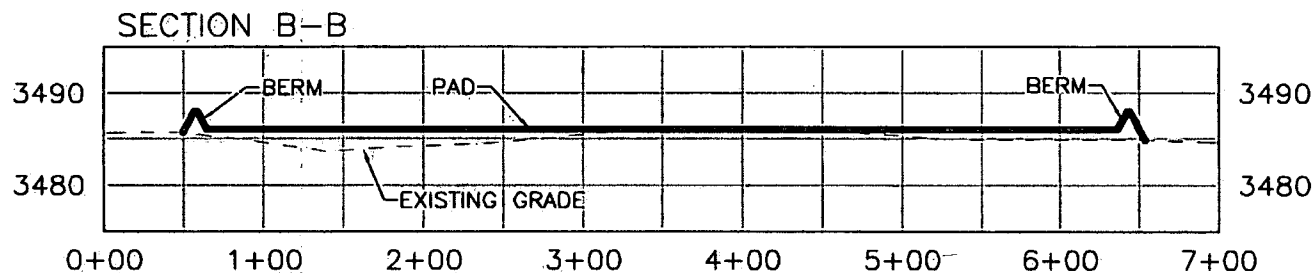
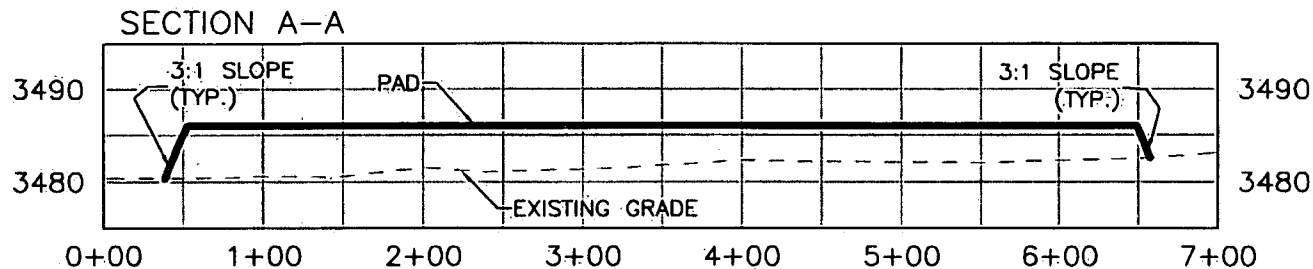
MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

CUT	FILL	NET
15478 CU. YD	24601 CU. YD	9124 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

SHEET 1-2
SURVEY NO. 6671

CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.
 GRADING PLAN AND CROSS SECTIONS
 FOR TOMB RAIDER 12-1 FED 701H
 SECTION 12, TOWNSHIP 23 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

0 12 60 120 240
 SCALE 1" = 120' - 1" = 20' VER

CUT	FILL	NET
15478 CU. YD.	24601 CU. YD.	9124 CU. YD. (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

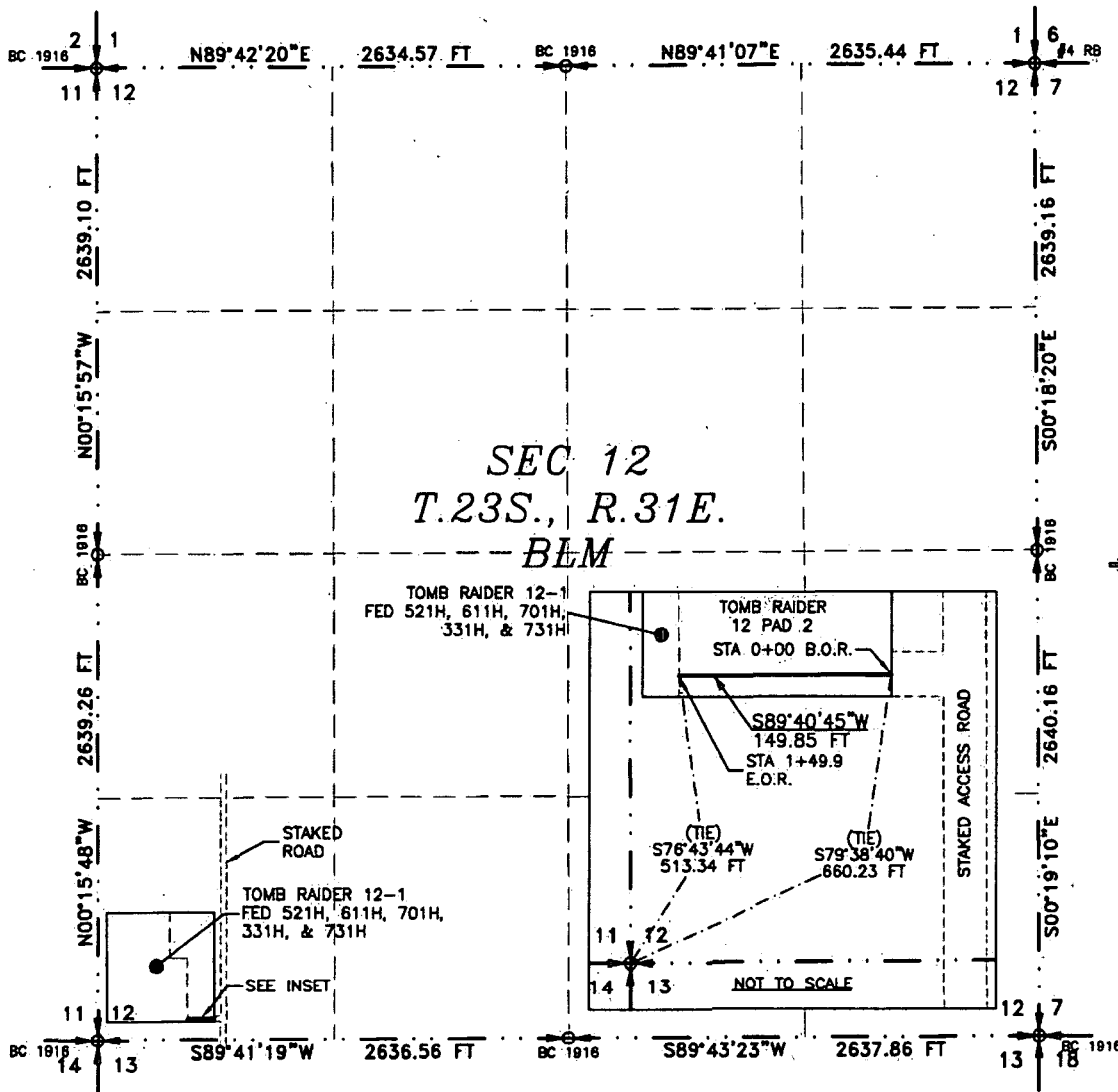
NOVEMBER 6, 2018
 MADRON SURVEYING, INC. 301 SOUTH CANAL, CARLSBAD, NEW MEXICO (575) 234-3341

SHEET 2-2
 SURVEY NO. 6671

ACCESS ROAD PLAT

ACCESS ROAD FOR TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018



SEE NEXT SHEET (2-2) FOR DESCRIPTION

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 6th DAY OF NOVEMBER 2018

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6671

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-2

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD FOR TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S79°38'40"W, A DISTANCE OF 660.23 FEET;
THENCE S89°40'45"W A DISTANCE OF 149.85 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S76°43'44"W, A DISTANCE OF 513.34 FEET;

SAID STRIP OF LAND BEING 149.85 FEET OR 9.08 RODS IN LENGTH, CONTAINING 0.103 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4 149.85 L.F. 9.08 RODS 0.103 ACRES.

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-2

MADRON SURVEYING, INC.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12787, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 12TH DAY OF NOVEMBER 2018

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

FILIMON F. JARAMILLO PLS 12787

SURVEY NO. 6671

CARLSBAD, NEW MEXICO



APD ID: 10400037318

Submission Date: 12/14/2018

Highlighted data
reflects the most
recent changes

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3488	0	0	ALLUVIUM,OTHER	NONE	No
2	RUSTLER	2722	766	766	SALT	NONE	No
3	SALADO	2347	1141	1141	SALT	NONE	No
4	BASE OF SALT	-963	4451	4451	SALT	NONE	No
5	DELAWARE	-993	4481	4481	SANDSTONE	NATURAL GAS,OIL	No
6	BONE SPRING LIME	-4868	8356	8356	LIMESTONE	NATURAL GAS,OIL	No
7	WOLFCAMP	-8332	11820	21820	SANDSTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M

Rating Depth: 11820

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below intermeidate casing, a BOP/BOPE system with the above minimum rating will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.

Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Choke Diagram Attachment:

WLFMP_10M_BOPE_Double_Ram_and_CLS_Schematic_Remote_Kill_Line_20181214093048.pdf

BOP Diagram Attachment:

WLFMP_10M_BOPE_Double_Ram_and_CLS_Schematic_Remote_Kill_Line_20181214093104.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Pressure Rating (PSI): 5M

Rating Depth: 11231

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below surface casing, a BOP/BOPE system with the above minimum rating will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.

Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Choke Diagram Attachment:

5M_BOPE_20180716121144_20181214075309.pdf

BOP Diagram Attachment:

5M_BOPE_20180716121144_20181214075317.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	14.75	10.75	NEW	API	N	0	791	0	791	-6768	-7557	791	J-55	40.5	STC	1.125	1.25	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	11231	0	11231	-6768	-11036	11231	P-110	29.7	OTHER - BTC	1.125	1.25	BUOY	1.6	BUOY	1.6
3	PRODUCTION	6.75	5.5	NEW	API	N	0	22083	0	11820	-6768	-16768	22083	P-110	20	OTHER - VAM SG	1.125	1.25	BUOY	1.6	BUOY	1.6

Casing Attachments

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Surf_Csg_Ass_20181214075552.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Int_Csg_Ass_20181214075711.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Prod_Csg_Ass_20181214075915.pdf

Section 4 - Cement

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	791	513	1.33	13.2	683	50	C	Class C + adds

INTERMEDIATE	Lead		0	7231	1067	3.31	9	1974	30	TUNED	TUNED LIGHT
INTERMEDIATE	Tail		7231	1123 1	848	1.33	13.2	1128	30	H	Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
PRODUCTION	Lead		0	2208 3	1542	1.33	13.2	2050	10	CLASS H	0.125 lbs/sack Poly-E- Flake
PRODUCTION	Tail										none

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1123 1	WATER-BASED MUD	9	10				2			

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1182 0	WATER-BASED MUD	8.5	9				2			
1123 1	2208 3	OIL-BASED MUD	10	10.5							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Will run GRMWD from TD to from KOP. Cement bond logs will be run in vertical to determine top of cement. Stated logs run will be in the completion report and submitted to the BLM.

List of open and cased hole logs run in the well:

CALIPER,CBL,DS,GR,MUDLOG

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6454

Anticipated Surface Pressure: 3853.6

Anticipated Bottom Hole Temperature(F): 171

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Tomb_Raider_12_1_Fed_701H_H2S_20181214094207.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Devon_Tomb_Raider_12_1_Fed_701H_AC_Report_Permit_Plan_1_20181214094247.pdf

Devon_Tomb_Raider_12_1_Fed_701H_Permit_Plan_1_20181214094248.pdf

Devon_Tomb_Raider_12_1_Fed_701H_Plot_Permit_Plan_1_20181214094248.pdf

Tomb_Raider_12_1_Fed_701H_Drilling_Plan_10M_20190415133600.pdf

Other proposed operations facets description:

DRILLING PLAN-revised 4/15/2019 for cmt to surf in R111P

CLOSED LOOP DESIGN,

MB VERB MB WELLHEAD, GAS CAPTURE PLAN, SPEC SHEETS, SPUDDER RIG

Other proposed operations facets attachment:

Spudder_Rig_Info_20181214084913.pdf

8.625_32_P110EC__7.875_SD__BTC__20181214084913.pdf

Clsd_Loop_20181214085036.pdf

TODD_12_1_GasCapturePlan_12_13_2018_20181214085108.pdf

5.5_x_20_P110_EC_VAMSG_20181214084912.pdf

WLFMP_MB_Verb_10M_Alt_Design_20181214094331.pdf

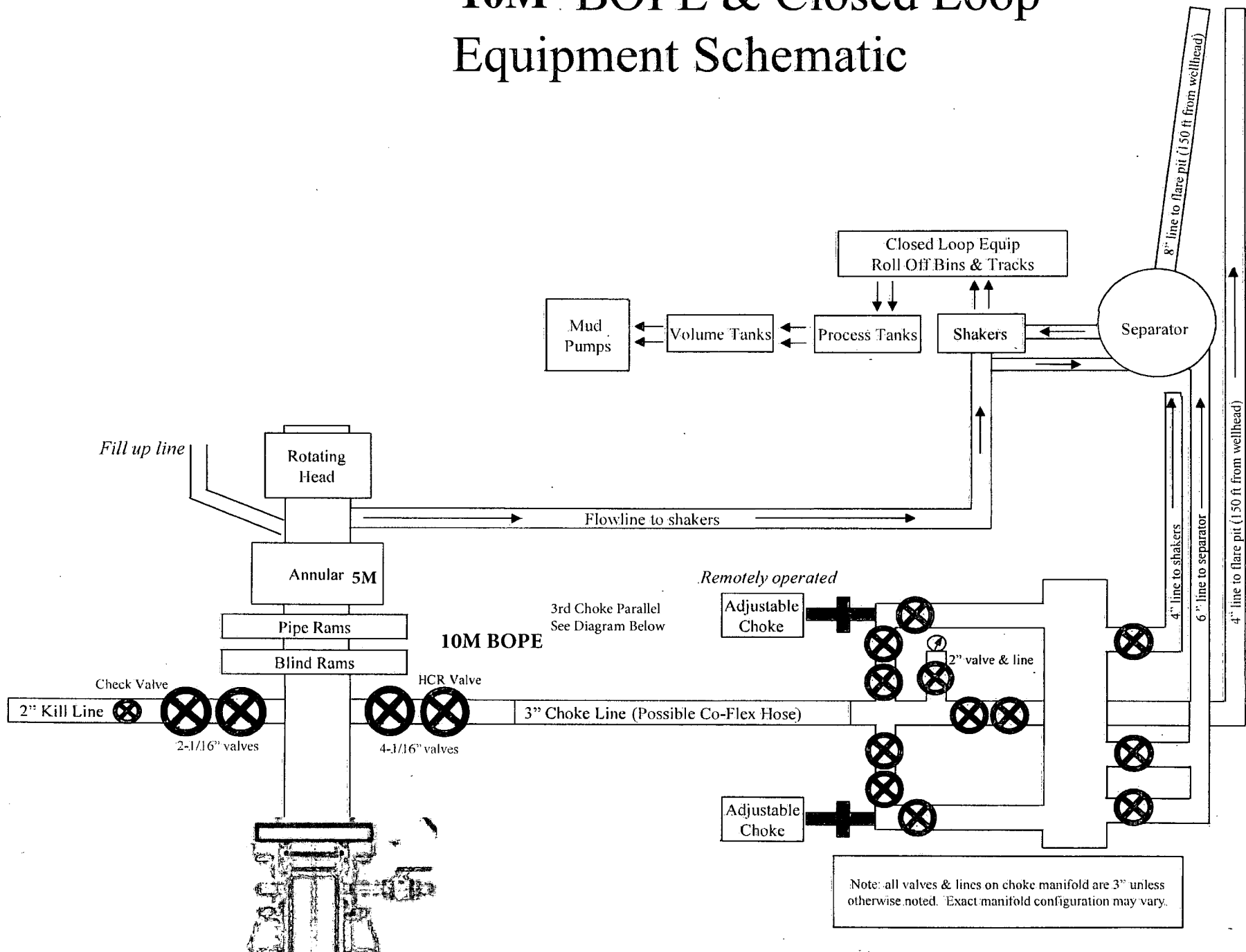
WLFMP_Wellhead_Schematic_10.75x7.625_x5.5_20181214094333.pdf

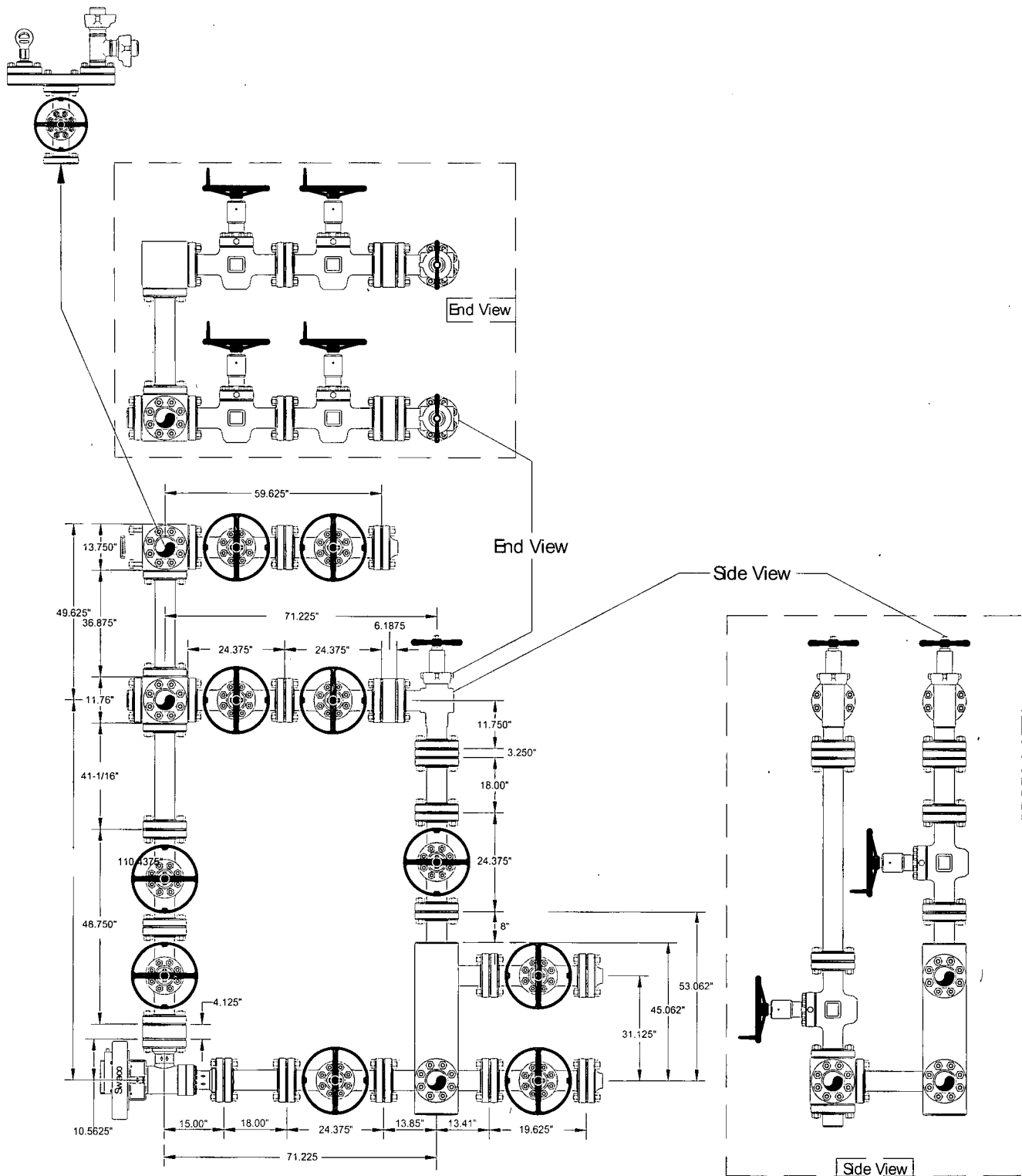
WLFMP_Wellhead_Schematic_Contingency_13.375x8.625x5.5_20181214094334.pdf

Other Variance attachment:

Co_flex_20181214085236.pdf

- 10M BOPE & Closed Loop Equipment Schematic



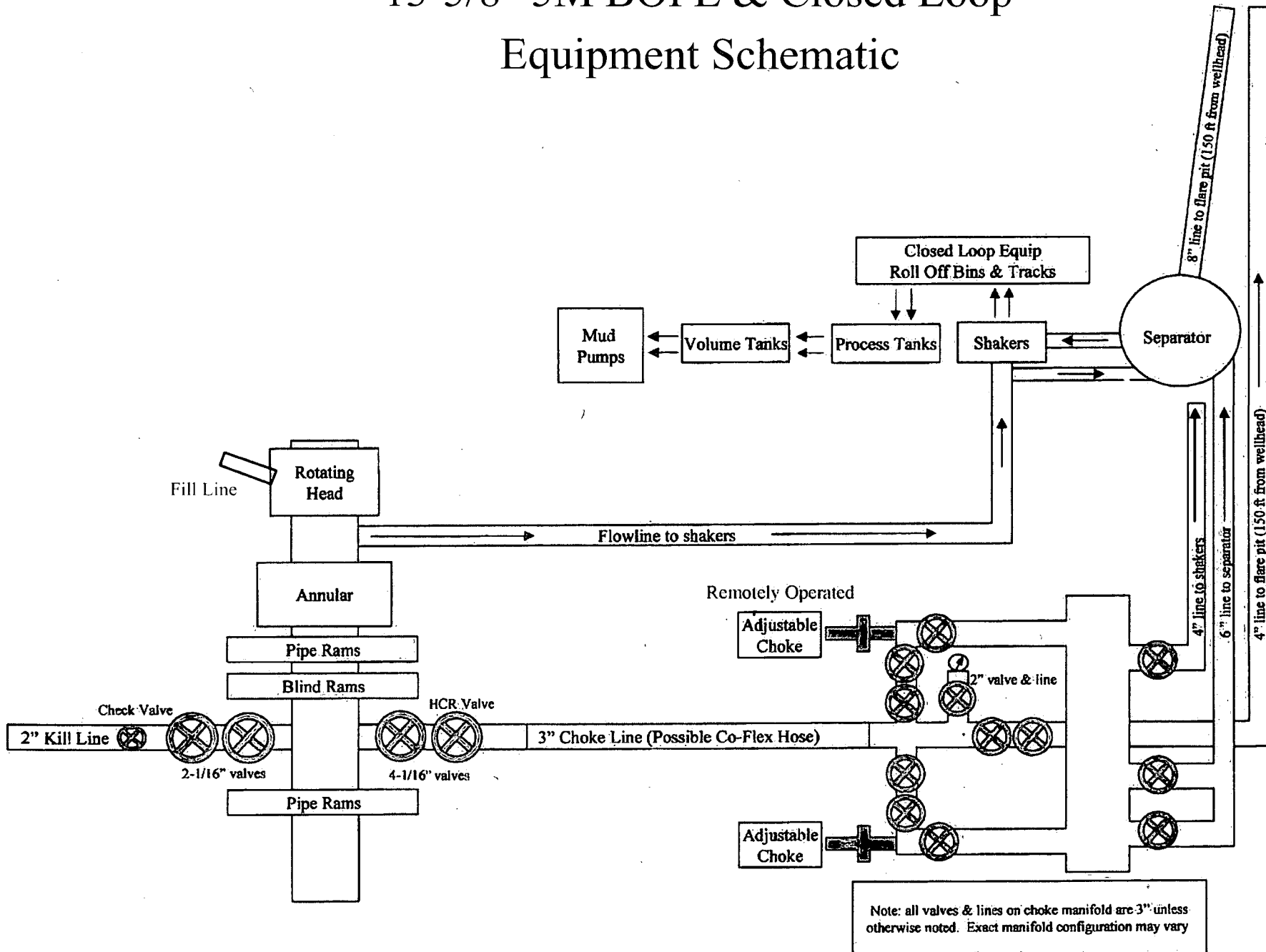


Helmerich & Payne
Fig 282

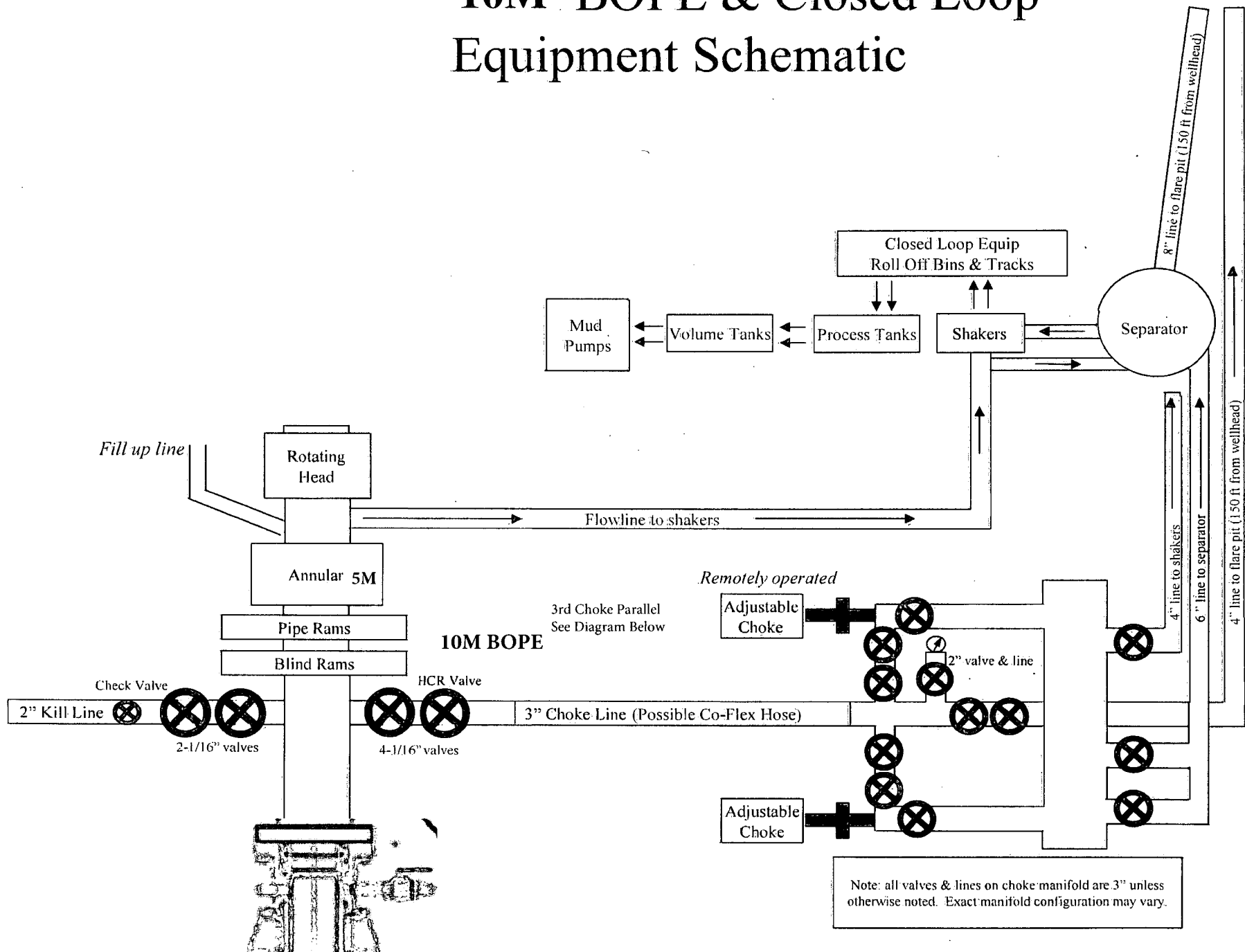
CAMERON

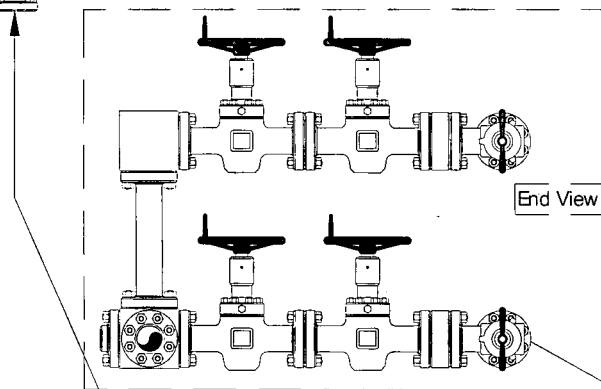
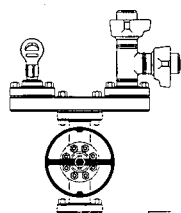
Name: Jeanette	Date: 7-19-06	Working Pressure:	# J5132-E
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13-5/8" 5M BOPE & Closed Loop Equipment Schematic

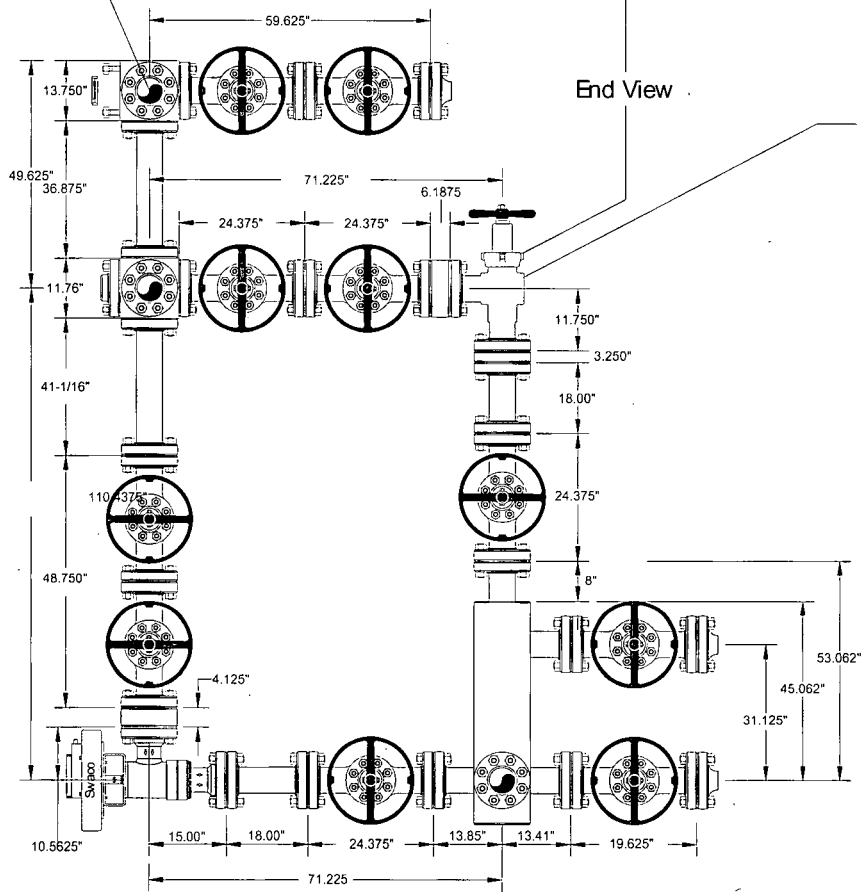


10M BOPE & Closed Loop Equipment Schematic



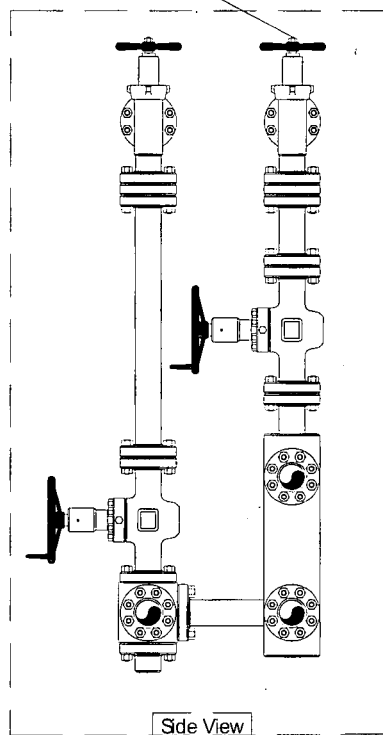


End View



End View

Side View



Side View

Helmerich & Payne
Rg 282

CAMERON

Name: Jeanette

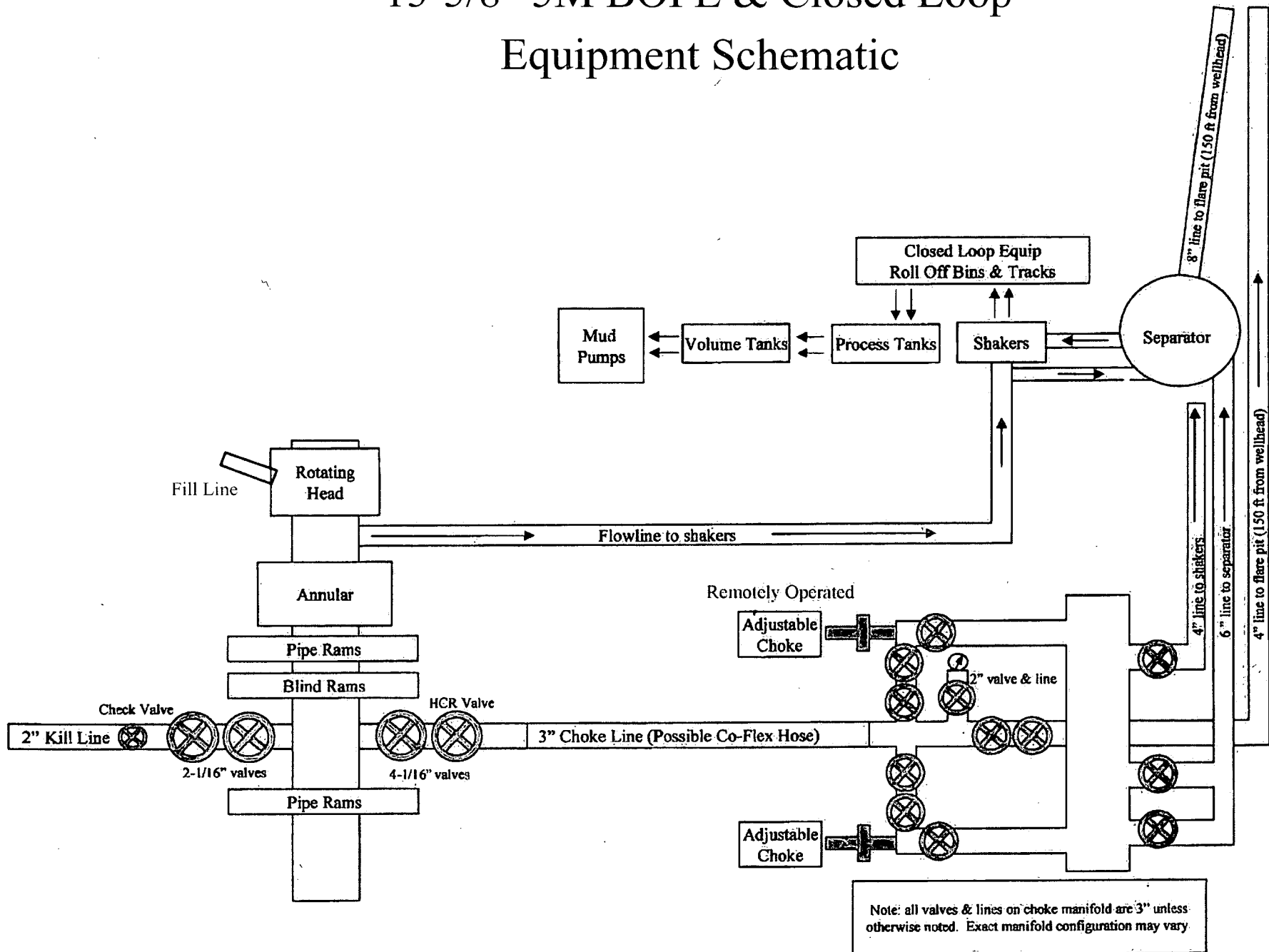
Date: 7-19-06

Working Pressure:

#

J-5132-E

13-5/8" 5M BOPE & Closed Loop Equipment Schematic



Casing Assumptions and Load Cases

Surface

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Surface Casing Burst Design		
Load Case	External Pressure	Internal Pressure
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Displace to Gas	Formation Pore Pressure	Dry gas from next casing point

Surface Casing Collapse Design		
Load Case	External Pressure	Internal Pressure
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Surface Casing Tension Design	
Load Case	Assumptions
Overpull	100kips
Runing in hole	3 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Intermediate

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Intermediate Casing Burst Design		
Load Case	External Pressure	Internal Pressure
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Fracture @ Shoe	Formation Pore Pressure	Dry gas

Intermediate Casing Collapse Design		
Load Case	External Pressure	Internal Pressure
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Intermediate Casing Tension Design	
Load Case	Assumptions
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Production

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Production Casing Burst Design		
Load Case	External Pressure	Internal Pressure
Pressure Test	Formation Pore Pressure	Fluid in hole (water or produced water) + test psi
Tubing Leak	Formation Pore Pressure	Packer @ KOP, leak below surface 8.6 ppg packer fluid
Stimulation	Formation Pore Pressure	Max frac pressure with heaviest frac fluid

Production Casing Collapse Design		
Load Case	External Pressure	Internal Pressure
Full Evacuation	Water gradient in cement, mud above TOC.	None
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	Assumptions
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A



**Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015**

Hydrogen Sulfide (H₂S) Contingency Plan

For

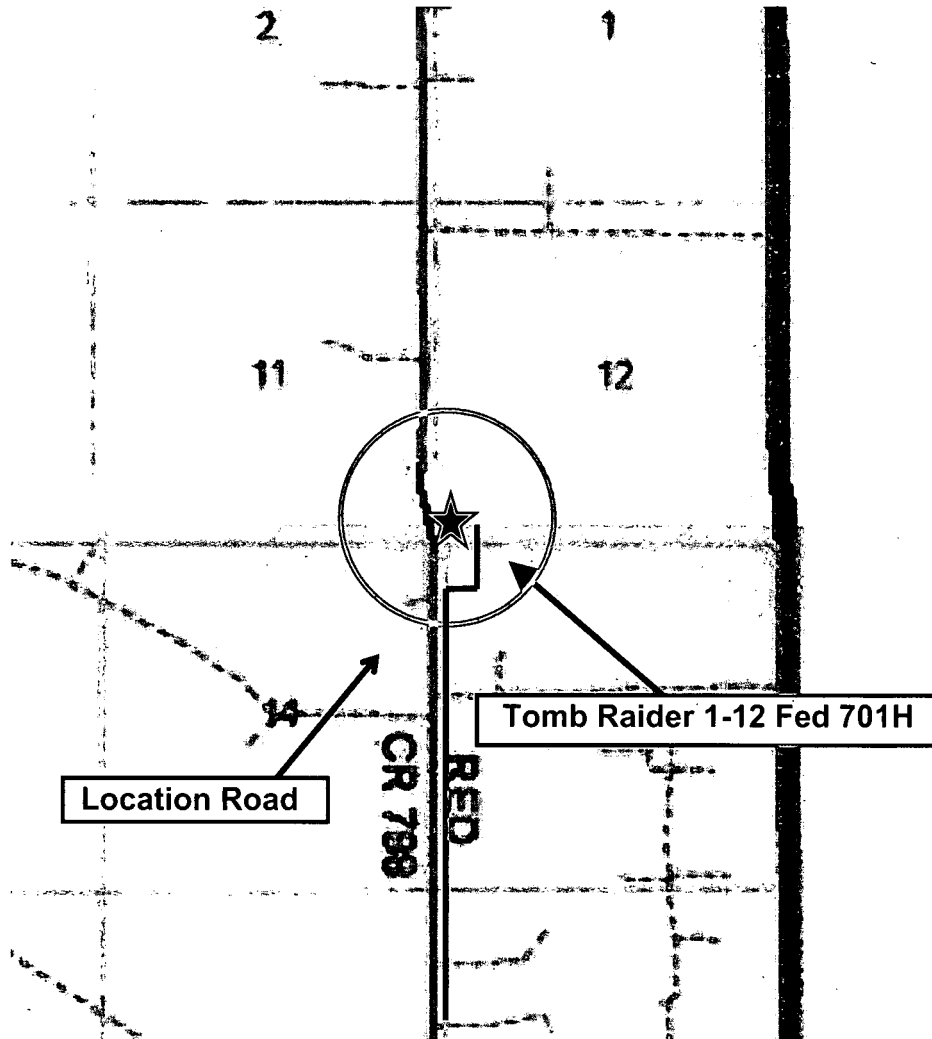
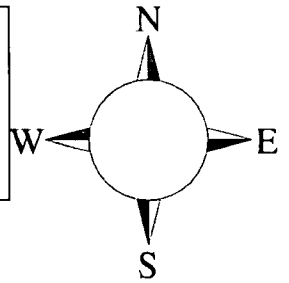
Tomb Raider 12-1 Fed 701H

**Sec-12 T-23S R-31E
250' FSL & 230' FWL
LAT. = 32.3123870' N (NAD83)
LONG = 103.7392828' W**

Eddy County NM

Tomb Raider 1-12 Fed 701H

This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.



Assumed 100 ppm ROE = 3000' (Radius of Exposure)
100 ppm H₂S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H₂S monitors and air packs in order to control the release.**
- **Use the “buddy system” to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
 - **Detection of H₂S, and**
 - **Measures for protection against the gas,**
 - **Equipment used for protection and emergency response.**

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H₂S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H₂S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H₂S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H₂S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H₂S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H₂S.

1. Well Control Equipment

- A. Flare line
- B. Choke manifold – Remotely Operated
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer and rotating head.
- E. Mud/Gas Separator

2. Protective equipment for essential personnel:

30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. H₂S detection and monitoring equipment:

Portable H₂S monitors positioned on location for best coverage and response. These units have warning lights which activate when H₂S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

- Bell nipple
- Possum Belly/Shale shaker
- Rig floor
- Choke manifold
- Cellar

Visual warning systems:

- A. Wind direction indicators as shown on well site diagram
- B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. Mud program:

The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.

5. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H₂S trim.
- B. All elastomers used for packing and seals shall be H₂S trim.

6. Communication:

- A. Company personnel have/use cellular telephones in the field.
- B. Land line (telephone) communications at Office

7. Well testing:

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H₂S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

<u>Devon Energy Corp. Company Call List</u>		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
EHS Professional – Laura Wright		405-439-8129
<u>Agency Call List</u>		
<u>Lea County (575)</u>	Hobbs	
	Lea County Communication Authority	393-3981
	State Police	392-5588
	City Police	397-9265
	Sheriff's Office	393-2515
	Ambulance	911
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
<u>Eddy County (575)</u>	Carlsbad	
	State Police	885-3137
	City Police	885-2111
	Sheriff's Office	887-7551
	Ambulance	911
	Fire Department	885-3125
	LEPC (Local Emergency Planning Committee)	887-3798
	US Bureau of Land Management	887-6544
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600
	24 HR	(505) 827-9126
	National Emergency Response Center	(800) 424-8802
	National Pollution Control Center: Direct	(703) 872-6000
	For Oil Spills	(800) 280-7118
	Emergency Services	
	Wild Well Control	(281) 784-4700
	Cudd Pressure Control	(915) 699-0139 (915) 563-3356
	Halliburton	(575) 746-2757
	B. J. Services	(575) 746-3569
	Give GPS position:	
	Native Air – Emergency Helicopter – Hobbs	(575) 392-6429
	Flight For Life - Lubbock, TX	(806) 743-9911
	Aerocare - Lubbock, TX	(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM	(800) 222-1222
	Poison Control (24/7)	(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service	(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov	

Prepared in conjunction with
Dave Small



WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 12-T23S-R31E

Tomb Raider 12-1 Fed 701H

Wellbore #1

Permit Plan 1

Anticollision Report

30 November, 2018

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference	Permit Plan 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 50.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,500.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	11/30/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	22,083.37	Permit Plan 1 (Wellbore #1)	MWD+HDGM	OWSG MWD + HDGM	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Sec 01-T23S-R31E						
Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1						Out of range
Belloq 2 State 5H - Wellbore #1 - Actual						Out of range
Tomb Raider 1 Fed 1H - Original - Actual						Out of range
Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole	10,241.65	20,215.00	179.47	86.19	1.924	Minor Risk, CC
Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole	10,250.00	20,215.00	179.66	85.93	1.917	Minor Risk, ES, SF
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	10,496.66	20,480.00	1,283.74	1,092.29	6.705	CC, ES, SF
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals						Out of range
Tomb Raider 1-12 Fed Com 234H - Wellbore #1 - Wellbo						Out of range
Tomb Raider 1-12 Fed Com 528H - Wellbore #1 - Wellbo						Out of range
Tomb Raider 1-12 Fed Com 718H - Wellbore #1 - Wellbo						Out of range
Sec 12-T23S-R31E						
Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan	2,400.00	2,400.20	29.98	13.19	1.786	Minor Risk, CC
Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan	2,450.00	2,449.95	30.19	13.05	1.762	Minor Risk, ES
Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan	22,083.37	21,908.87	381.66	97.89	1.345	Major Risk, SF
Tomb Raider 12-1 Fed 516H - Wellbore #1 - Permit Plan						Out of range
Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan	6,771.47	6,785.65	131.84	84.24	2.770	Alert, CC
Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan	6,900.00	6,913.75	132.27	83.68	2.722	Alert, ES
Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan	7,200.00	7,212.72	136.50	85.59	2.681	Alert, SF
Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan	2,750.00	2,750.10	29.97	10.68	1.553	Minor Risk, CC
Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan	2,800.00	2,800.10	30.17	10.53	1.536	Minor Risk, ES
Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan	22,083.37	21,950.09	346.42	48.58	1.163	Major Risk, SF
Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan	2,000.00	2,000.40	59.98	46.05	4.306	Alert, CC
Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan	2,050.00	2,049.88	60.20	45.92	4.216	Alert, ES
Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan	22,083.37	22,059.16	573.53	261.65	1.839	Minor Risk, SF

Offset Design		Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole										Offset Site Error:		5.00 ft
Survey Program:		150-MWD+HDGM										Offset Well Error:		0.00 ft
Reference		Offset		Semi Major Axis			Distance							
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning	
Depth	Depth	Depth	Depth			Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
8,800.00	8,786.56	20,215.00	10,196.11	31.37	151.04	-125.21	-11.52	419.90	1,452.78	1,355.18	97.59	14.886		
8,850.00	8,836.44	20,215.00	10,196.11	31.55	151.04	-125.21	-11.52	419.90	1,403.17	1,305.47	97.70	14.361		
8,900.00	8,886.33	20,215.00	10,196.11	31.73	151.04	-125.21	-11.52	419.90	1,353.60	1,255.78	97.82	13.838		
8,950.00	8,936.21	20,215.00	10,196.11	31.92	151.04	-125.21	-11.52	419.90	1,304.06	1,206.13	97.93	13.317		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole													Offset Well Error:	0.00 ft
Survey Program: 150-MWD+HDGM														
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)	
9,000.00	8,986.10	20,215.00	10,196.11	32.10	151.04	-125.21	-11.52	419.90	1,254.55	1,156.52	98.03	12.797		
9,050.00	9,035.98	20,215.00	10,196.11	32.29	151.04	-125.21	-11.52	419.90	1,205.09	1,106.95	98.14	12.279		
9,100.00	9,085.86	20,215.00	10,196.11	32.47	151.04	-125.21	-11.52	419.90	1,155.67	1,057.42	98.24	11.763		
9,150.00	9,135.75	20,215.00	10,196.11	32.65	151.04	-125.21	-11.52	419.90	1,106.30	1,007.95	98.35	11.249		
9,200.00	9,185.63	20,215.00	10,196.11	32.84	151.04	-125.21	-11.52	419.90	1,056.99	958.55	98.45	10.737		
9,250.00	9,235.51	20,215.00	10,196.11	33.02	151.04	-125.21	-11.52	419.90	1,007.76	909.21	98.54	10.227		
9,300.00	9,285.40	20,215.00	10,196.11	33.21	151.04	-125.21	-11.52	419.90	958.60	859.96	98.63	9.719		
9,350.00	9,335.28	20,215.00	10,196.11	33.39	151.04	-125.21	-11.52	419.90	909.53	810.81	98.72	9.213		
9,400.00	9,385.17	20,215.00	10,196.11	33.57	151.04	-125.21	-11.52	419.90	860.57	761.77	98.80	8.710		
9,450.00	9,435.05	20,215.00	10,196.11	33.76	151.04	-125.21	-11.52	419.90	811.73	712.86	98.88	8.210		
9,500.00	9,484.93	20,215.00	10,196.11	33.94	151.04	-125.21	-11.52	419.90	763.05	664.11	98.94	7.712		
9,550.00	9,534.82	20,215.00	10,196.11	34.13	151.04	-125.21	-11.52	419.90	714.55	615.56	98.99	7.218		
9,600.00	9,584.70	20,215.00	10,196.11	34.31	151.04	-125.21	-11.52	419.90	666.27	567.24	99.03	6.728		
9,650.00	9,634.59	20,215.00	10,196.11	34.49	151.04	-125.21	-11.52	419.90	618.27	519.21	99.05	6.242		
9,700.00	9,684.47	20,215.00	10,196.11	34.68	151.04	-125.21	-11.52	419.90	570.60	471.55	99.05	5.761		
9,750.00	9,734.35	20,215.00	10,196.11	34.86	151.04	-125.21	-11.52	419.90	523.38	424.36	99.02	5.286		
9,800.00	9,784.24	20,215.00	10,196.11	35.05	151.04	-125.21	-11.52	419.90	476.72	377.78	98.94	4.818	Alert	
9,850.00	9,834.12	20,215.00	10,196.11	35.23	151.04	-125.21	-11.52	419.90	430.81	332.01	98.79	4.361	Alert	
9,900.00	9,884.01	20,215.00	10,196.11	35.41	151.04	-125.21	-11.52	419.90	385.92	287.36	98.55	3.916	Alert	
9,950.00	9,933.89	20,215.00	10,196.11	35.60	151.04	-125.21	-11.52	419.90	342.44	244.28	98.16	3.489	Alert	
10,000.00	9,983.77	20,215.00	10,196.11	35.78	151.04	-125.21	-11.52	419.90	301.00	203.47	97.53	3.086	Alert	
10,050.00	10,033.66	20,215.00	10,196.11	35.97	151.04	-125.21	-11.52	419.90	262.56	166.01	96.55	2.720	Alert	
10,100.00	10,083.54	20,215.00	10,196.11	36.15	151.04	-125.21	-11.52	419.90	228.63	133.55	95.08	2.405	Minor Risk	
10,150.00	10,133.43	20,215.00	10,196.11	36.34	151.04	-125.21	-11.52	419.90	201.51	108.22	93.29	2.160	Minor Risk	
10,200.00	10,183.31	20,215.00	10,196.11	36.52	151.04	-125.21	-11.52	419.90	184.23	91.99	92.25	1.997	Minor Risk	
10,241.65	10,224.86	20,215.00	10,196.11	36.67	151.04	-125.21	-11.52	419.90	179.47	86.19	93.27	1.924	Minor Risk, CC	
10,250.00	10,233.19	20,215.00	10,196.11	36.70	151.04	-125.21	-11.52	419.90	179.66	85.93	93.73	1.917	Minor Risk, ES, SF	
10,300.00	10,283.08	20,215.00	10,196.11	36.89	151.04	-125.21	-11.52	419.90	188.71	91.20	97.51	1.935	Minor Risk	
10,350.00	10,332.96	20,215.00	10,196.11	37.07	151.04	-125.21	-11.52	419.90	209.64	108.42	101.22	2.071	Minor Risk	
10,400.00	10,382.85	20,215.00	10,196.11	37.26	151.04	-125.21	-11.52	419.90	239.34	135.71	103.63	2.310	Minor Risk	
10,450.00	10,432.73	20,215.00	10,196.11	37.44	151.04	-125.21	-11.52	419.90	274.99	170.06	104.93	2.621	Alert	
10,500.00	10,482.61	20,215.00	10,196.11	37.62	151.04	-125.21	-11.52	419.90	314.57	209.00	105.57	2.980	Alert	
10,550.00	10,532.50	20,215.00	10,196.11	37.81	151.04	-125.21	-11.52	419.90	356.78	250.90	105.87	3.370	Alert	
10,600.00	10,582.38	20,215.00	10,196.11	37.99	151.04	-125.21	-11.52	419.90	400.78	294.77	106.01	3.780	Alert	
10,650.00	10,632.26	20,215.00	10,196.11	38.18	151.04	-125.21	-11.52	419.90	446.05	339.97	106.08	4.205	Alert	
10,700.00	10,682.17	20,215.00	10,196.11	38.36	151.04	-126.54	-11.52	419.90	492.18	386.07	106.11	4.638	Alert	
10,750.00	10,732.10	20,215.00	10,196.11	38.54	151.04	-128.10	-11.52	419.90	538.86	432.77	106.09	5.079		
10,800.00	10,782.07	20,215.00	10,196.11	38.72	151.04	-129.74	-11.52	419.90	585.97	479.91	106.06	5.525		
10,850.00	10,832.06	20,215.00	10,196.11	38.90	151.04	-131.44	-11.52	419.90	633.39	527.37	106.03	5.974		
10,900.00	10,882.05	20,215.00	10,196.11	39.08	151.04	-133.19	-11.52	419.90	681.06	575.07	105.99	6.425		
10,950.00	10,932.05	20,215.00	10,196.11	39.25	151.04	-21.72	-11.52	419.90	728.95	622.97	105.98	6.879		
11,000.00	10,982.05	20,215.00	10,196.11	39.42	151.04	-21.72	-11.52	419.90	777.10	671.12	105.98	7.332		
11,050.00	11,032.05	20,215.00	10,196.11	39.59	151.04	-21.72	-11.52	419.90	825.47	719.45	106.02	7.786		
11,100.00	11,082.05	20,215.00	10,196.11	39.76	151.04	-21.72	-11.52	419.90	874.02	767.95	106.07	8.240		
11,150.00	11,132.05	20,215.00	10,196.11	39.92	151.04	-21.72	-11.52	419.90	922.73	816.59	106.14	8.694		
11,200.00	11,182.05	20,215.00	10,196.11	40.09	151.04	-21.72	-11.52	419.90	971.57	865.35	106.22	9.147		
11,250.00	11,232.05	20,215.00	10,196.11	40.26	151.04	-21.72	-11.52	419.90	1,020.52	914.20	106.31	9.599		
11,300.00	11,282.03	20,215.00	10,196.11	40.43	151.04	-16.37	-11.52	419.90	1,069.36	962.94	106.42	10.049		
11,350.00	11,331.74	20,215.00	10,196.11	40.60	151.04	-12.15	-11.52	419.90	1,117.34	1,010.82	106.52	10.489		
11,400.00	11,380.81	20,215.00	10,196.11	40.76	151.04	-9.61	-11.52	419.90	1,164.22	1,057.58	106.63	10.918		
11,450.00	11,428.85	20,215.00	10,196.11	40.91	151.04	-7.93	-11.52	419.90	1,209.77	1,103.02	106.74	11.334		
11,500.00	11,475.52	20,215.00	10,196.11	41.05	151.04	-6.74	-11.52	419.90	1,253.81	1,146.96	106.84	11.735		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 150-MWD+HDGM													Offset Well Error:	0.00 ft
Reference														
Offset														
Semi Major Axis														
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning	
Depth	Depth	Depth	Depth			Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
11,550.00	11,520.44	20,215.00	10,196.11	41.18	151.04	-5.86	-11.52	419.90	1,296.17	1,189.24	106.93	12.122		
11,600.00	11,563.29	20,215.00	10,196.11	41.30	151.04	-5.19	-11.52	419.90	1,336.72	1,229.72	107.01	12.492		
11,650.00	11,603.72	20,215.00	10,196.11	41.41	151.04	-4.67	-11.52	419.90	1,375.31	1,268.25	107.06	12.846		
11,700.00	11,641.45	20,215.00	10,196.11	41.50	151.04	-4.26	-11.52	419.90	1,411.83	1,304.73	107.10	13.182		
11,750.00	11,676.17	20,215.00	10,196.11	41.58	151.04	-3.92	-11.52	419.90	1,446.16	1,339.04	107.12	13.500		
11,800.00	11,707.62	20,211.76	10,196.02	41.65	150.99	-3.63	-8.28	419.95	1,478.19	1,371.10	107.10	13.802		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	5.00 ft
Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1														Offset Well Error:	0.50 ft
Survey Program: 147-MWD+HDGM															
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
9,750.00	9,734.35	20,480.00	10,368.45	34.86	154.90	-30.48	-2.33	1,744.12	1,485.09	1,311.55	173.54	8.557			
9,800.00	9,784.24	20,480.00	10,368.45	35.05	154.90	-30.48	-2.33	1,744.12	1,460.59	1,285.13	175.46	8.324			
9,850.00	9,834.12	20,480.00	10,368.45	35.23	154.90	-30.48	-2.33	1,744.12	1,437.42	1,260.07	177.35	8.105			
9,900.00	9,884.01	20,480.00	10,368.45	35.41	154.90	-30.48	-2.33	1,744.12	1,415.63	1,236.45	179.17	7.901			
9,950.00	9,933.89	20,480.00	10,368.45	35.60	154.90	-30.48	-2.33	1,744.12	1,395.29	1,214.36	180.93	7.712			
10,000.00	9,983.77	20,480.00	10,368.45	35.78	154.90	-30.48	-2.33	1,744.12	1,376.47	1,193.86	182.61	7.538			
10,050.00	10,033.66	20,480.00	10,368.45	35.97	154.90	-30.48	-2.33	1,744.12	1,359.23	1,175.04	184.19	7.380			
10,100.00	10,083.54	20,480.00	10,368.45	36.15	154.90	-30.48	-2.33	1,744.12	1,343.63	1,157.98	185.65	7.238			
10,150.00	10,133.43	20,480.00	10,368.45	36.34	154.90	-30.48	-2.33	1,744.12	1,329.73	1,142.75	186.98	7.112			
10,200.00	10,183.31	20,480.00	10,368.45	36.52	154.90	-30.48	-2.33	1,744.12	1,317.58	1,129.42	188.16	7.003			
10,250.00	10,233.19	20,480.00	10,368.45	36.70	154.90	-30.48	-2.33	1,744.12	1,307.23	1,118.05	189.18	6.910			
10,300.00	10,283.08	20,480.00	10,368.45	36.89	154.90	-30.48	-2.33	1,744.12	1,298.72	1,108.70	190.02	6.835			
10,350.00	10,332.96	20,480.00	10,368.45	37.07	154.90	-30.48	-2.33	1,744.12	1,292.09	1,101.42	190.68	6.776			
10,400.00	10,382.85	20,480.00	10,368.45	37.26	154.90	-30.48	-2.33	1,744.12	1,287.38	1,096.24	191.14	6.735			
10,450.00	10,432.73	20,480.00	10,368.45	37.44	154.90	-30.48	-2.33	1,744.12	1,284.59	1,093.20	191.39	6.712			
10,496.66	10,479.28	20,480.00	10,368.45	37.61	154.90	-30.48	-2.33	1,744.12	1,283.74	1,092.29	191.45	6.705	CC, ES, SF		
10,500.00	10,482.61	20,480.00	10,368.45	37.62	154.90	-30.48	-2.33	1,744.12	1,283.75	1,092.30	191.45	6.705			
10,550.00	10,532.50	20,480.00	10,368.45	37.81	154.90	-30.48	-2.33	1,744.12	1,284.85	1,093.55	191.30	6.717			
10,600.00	10,582.38	20,480.00	10,368.45	37.99	154.90	-30.48	-2.33	1,744.12	1,287.90	1,096.95	190.94	6.745			
10,650.00	10,632.26	20,480.00	10,368.45	38.18	154.90	-30.48	-2.33	1,744.12	1,292.87	1,102.48	190.39	6.791			
10,700.00	10,682.17	20,480.00	10,368.45	38.36	154.90	-30.53	-2.33	1,744.12	1,299.98	1,110.32	189.65	6.855			
10,750.00	10,732.10	20,480.00	10,368.45	38.54	154.90	-30.61	-2.33	1,744.12	1,309.51	1,120.76	188.74	6.938			
10,800.00	10,782.07	20,480.00	10,368.45	38.72	154.90	-30.70	-2.33	1,744.12	1,321.41	1,133.73	187.68	7.041			
10,850.00	10,832.06	20,480.00	10,368.45	38.90	154.90	-30.81	-2.33	1,744.12	1,335.61	1,149.14	186.47	7.163			
10,900.00	10,882.05	20,480.00	10,368.45	39.08	154.90	-30.95	-2.33	1,744.12	1,352.05	1,166.90	185.15	7.302			
10,950.00	10,932.05	20,480.00	10,368.45	39.25	154.90	81.01	-2.33	1,744.12	1,370.50	1,186.78	183.72	7.460			
11,000.00	10,982.05	20,480.00	10,368.45	39.42	154.90	81.01	-2.33	1,744.12	1,390.54	1,208.33	182.21	7.632			
11,050.00	11,032.05	20,480.00	10,368.45	39.59	154.90	81.01	-2.33	1,744.12	1,412.06	1,231.44	180.62	7.818			
11,100.00	11,082.05	20,480.00	10,368.45	39.76	154.90	81.01	-2.33	1,744.12	1,435.00	1,256.02	178.97	8.018			
11,150.00	11,132.05	20,480.00	10,368.45	39.92	154.90	81.01	-2.33	1,744.12	1,459.29	1,282.00	177.29	8.231			
11,200.00	11,182.05	20,480.00	10,368.45	40.09	154.90	81.01	-2.33	1,744.12	1,484.87	1,309.29	175.58	8.457			

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.50 ft
Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan 1													
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
0.00	0.00	0.20	0.20	0.50	0.50	89.71	0.15	29.98	29.98				
50.00	50.00	50.20	50.20	0.50	0.50	89.71	0.15	29.98	29.98	28.97	1.01	29.786	
100.00	100.00	100.20	100.20	0.52	0.52	89.71	0.15	29.98	29.98	28.94	1.04	28.947	
150.00	150.00	150.20	150.20	0.59	0.59	89.71	0.15	29.98	29.98	28.80	1.18	25.389	
200.00	200.00	200.20	200.20	0.70	0.70	89.71	0.15	29.98	29.98	28.58	1.40	21.343	
250.00	250.00	250.20	250.20	0.84	0.84	89.71	0.15	29.98	29.98	28.30	1.68	17.888	
300.00	300.00	300.20	300.20	0.99	0.99	89.71	0.15	29.98	29.98	28.01	1.98	15.178	
350.00	350.00	350.20	350.20	1.15	1.15	89.71	0.15	29.98	29.98	27.69	2.29	13.083	
400.00	400.00	400.20	400.20	1.31	1.31	89.71	0.15	29.98	29.98	27.36	2.62	11.448	
450.00	450.00	450.20	450.20	1.48	1.48	89.71	0.15	29.98	29.98	27.03	2.95	10.151	
500.00	500.00	500.20	500.20	1.65	1.65	89.71	0.15	29.98	29.98	26.69	3.29	9.105	
550.00	550.00	550.20	550.20	1.82	1.82	89.71	0.15	29.98	29.98	26.34	3.64	8.245	
600.00	600.00	600.20	600.20	1.99	1.99	89.71	0.15	29.98	29.98	26.00	3.98	7.529	
650.00	650.00	650.20	650.20	2.16	2.17	89.71	0.15	29.98	29.98	25.65	4.33	6.924	
700.00	700.00	700.20	700.20	2.34	2.34	89.71	0.15	29.98	29.98	25.30	4.68	6.407	
750.00	750.00	750.20	750.20	2.51	2.52	89.71	0.15	29.98	29.98	24.95	5.03	5.960	
800.00	800.00	800.20	800.20	2.69	2.69	89.71	0.15	29.98	29.98	24.60	5.38	5.571	
850.00	850.00	850.20	850.20	2.87	2.87	89.71	0.15	29.98	29.98	24.25	5.73	5.228	
900.00	900.00	900.20	900.20	3.04	3.04	89.71	0.15	29.98	29.98	23.89	6.09	4.925 Alert	
950.00	950.00	950.20	950.20	3.22	3.22	89.71	0.15	29.98	29.98	23.54	6.44	4.654 Alert	
1,000.00	1,000.00	1,000.20	1,000.20	3.40	3.40	89.71	0.15	29.98	29.98	23.18	6.80	4.411 Alert	
1,050.00	1,050.00	1,050.20	1,050.20	3.58	3.58	89.71	0.15	29.98	29.98	22.83	7.15	4.193 Alert	
1,100.00	1,100.00	1,100.20	1,100.20	3.75	3.75	89.71	0.15	29.98	29.98	22.47	7.51	3.994 Alert	
1,150.00	1,150.00	1,150.20	1,150.20	3.93	3.93	89.71	0.15	29.98	29.98	22.12	7.86	3.814 Alert	
1,200.00	1,200.00	1,200.20	1,200.20	4.11	4.11	89.71	0.15	29.98	29.98	21.76	8.22	3.649 Alert	
1,250.00	1,250.00	1,250.20	1,250.20	4.29	4.29	89.71	0.15	29.98	29.98	21.41	8.57	3.497 Alert	
1,300.00	1,300.00	1,300.20	1,300.20	4.46	4.46	89.71	0.15	29.98	29.98	21.05	8.93	3.358 Alert	
1,350.00	1,350.00	1,350.20	1,350.20	4.64	4.64	89.71	0.15	29.98	29.98	20.70	9.29	3.229 Alert	
1,400.00	1,400.00	1,400.20	1,400.20	4.82	4.82	89.71	0.15	29.98	29.98	20.34	9.64	3.109 Alert	
1,450.00	1,450.00	1,450.20	1,450.20	5.00	5.00	89.71	0.15	29.98	29.98	19.98	10.00	2.999 Alert	
1,500.00	1,500.00	1,500.20	1,500.20	5.18	5.18	89.71	0.15	29.98	29.98	19.63	10.36	2.895 Alert	
1,550.00	1,550.00	1,550.20	1,550.20	5.36	5.36	89.71	0.15	29.98	29.98	19.27	10.71	2.799 Alert	
1,600.00	1,600.00	1,600.20	1,600.20	5.53	5.53	89.71	0.15	29.98	29.98	18.91	11.07	2.709 Alert	
1,650.00	1,650.00	1,650.20	1,650.20	5.71	5.71	89.71	0.15	29.98	29.98	18.55	11.43	2.624 Alert	
1,700.00	1,700.00	1,700.20	1,700.20	5.89	5.89	89.71	0.15	29.98	29.98	18.20	11.78	2.544 Alert	
1,750.00	1,750.00	1,750.20	1,750.20	6.07	6.07	89.71	0.15	29.98	29.98	17.84	12.14	2.469 Minor Risk	
1,800.00	1,800.00	1,800.20	1,800.20	6.25	6.25	89.71	0.15	29.98	29.98	17.48	12.50	2.399 Minor Risk	
1,850.00	1,850.00	1,850.20	1,850.20	6.43	6.43	89.71	0.15	29.98	29.98	17.13	12.86	2.332 Minor Risk	
1,900.00	1,900.00	1,900.20	1,900.20	6.61	6.61	89.71	0.15	29.98	29.98	16.77	13.21	2.269 Minor Risk	
1,950.00	1,950.00	1,950.20	1,950.20	6.78	6.79	89.71	0.15	29.98	29.98	16.41	13.57	2.209 Minor Risk	
2,000.00	2,000.00	2,000.20	2,000.20	6.96	6.96	89.71	0.15	29.98	29.98	16.05	13.93	2.153 Minor Risk	
2,050.00	2,050.00	2,050.20	2,050.20	7.14	7.14	89.71	0.15	29.98	29.98	15.70	14.29	2.099 Minor Risk	
2,100.00	2,100.00	2,100.20	2,100.20	7.32	7.32	89.71	0.15	29.98	29.98	15.34	14.64	2.047 Minor Risk	
2,150.00	2,150.00	2,150.20	2,150.20	7.50	7.50	89.71	0.15	29.98	29.98	14.98	15.00	1.999 Minor Risk	
2,200.00	2,200.00	2,200.20	2,200.20	7.68	7.68	89.71	0.15	29.98	29.98	14.62	15.36	1.952 Minor Risk	
2,250.00	2,250.00	2,250.20	2,250.20	7.86	7.86	89.71	0.15	29.98	29.98	14.26	15.72	1.908 Minor Risk	
2,300.00	2,300.00	2,300.20	2,300.20	8.04	8.04	89.71	0.15	29.98	29.98	13.91	16.07	1.865 Minor Risk	
2,350.00	2,350.00	2,350.20	2,350.20	8.22	8.22	89.71	0.15	29.98	29.98	13.55	16.43	1.825 Minor Risk	
2,400.00	2,400.00	2,400.20	2,400.20	8.39	8.39	89.71	0.15	29.98	29.98	13.19	16.79	1.786 Minor Risk, CC	
2,450.00	2,450.00	2,449.95	2,449.95	8.57	8.57	89.82	0.10	30.19	30.19	13.05	17.14	1.762 Minor Risk, ES	
2,500.00	2,500.00	2,499.68	2,499.68	8.75	8.74	90.12	-0.06	30.82	30.83	13.34	17.49	1.762 Minor Risk	
2,550.00	2,550.00	2,549.41	2,549.39	8.93	8.91	90.59	-0.33	31.87	31.88	14.05	17.83	1.788 Minor Risk	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,600.00	2,600.00	2,599.11	2,599.07	9.11	9.08	91.20	-0.70	33.33	33.36	15.18	18.18	1.835 Minor Risk		
2,650.00	2,650.00	2,648.78	2,648.70	9.29	9.24	91.91	-1.18	35.22	35.27	16.75	18.52	1.905 Minor Risk		
2,700.00	2,700.00	2,698.42	2,698.28	9.47	9.41	92.68	-1.76	37.51	37.60	18.74	18.86	1.994 Minor Risk		
2,750.00	2,750.00	2,748.01	2,747.79	9.65	9.58	93.48	-2.44	40.22	40.37	21.17	19.20	2.103 Minor Risk		
2,800.00	2,800.00	2,797.56	2,797.24	9.82	9.75	-17.81	-3.23	43.35	43.36	23.83	19.53	2.220 Minor Risk		
2,850.00	2,849.99	2,847.08	2,846.63	9.99	9.92	-17.26	-4.13	46.88	46.37	26.51	19.85	2.335 Minor Risk		
2,900.00	2,899.98	2,896.58	2,895.96	10.15	10.09	-16.85	-5.13	50.83	49.39	29.21	20.18	2.448 Minor Risk		
2,950.00	2,949.96	2,946.06	2,945.23	10.32	10.26	-16.54	-6.23	55.19	52.41	31.91	20.50	2.557 Alert		
3,000.00	2,999.92	2,995.50	2,994.43	10.49	10.44	-16.33	-7.44	59.95	55.45	34.63	20.82	2.663 Alert		
3,050.00	3,049.86	3,045.41	3,044.07	10.66	10.61	-16.23	-8.71	64.98	58.30	37.14	21.16	2.755 Alert		
3,100.00	3,099.78	3,104.65	3,093.74	10.83	10.82	-16.25	-9.98	70.01	60.72	39.19	21.53	2.820 Alert		
3,150.00	3,149.68	3,145.31	3,143.43	11.00	10.96	-16.37	-11.26	75.05	62.74	40.89	21.84	2.872 Alert		
3,200.00	3,199.56	3,204.72	3,193.12	11.17	11.17	-16.54	-12.53	80.08	64.61	42.40	22.22	2.908 Alert		
3,250.00	3,249.44	3,245.24	3,242.82	11.34	11.32	-16.69	-13.81	85.11	66.49	43.97	22.53	2.952 Alert		
3,300.00	3,299.33	3,304.79	3,292.51	11.51	11.53	-16.83	-15.08	90.15	68.37	45.47	22.90	2.985 Alert		
3,350.00	3,349.21	3,345.17	3,342.21	11.68	11.67	-16.97	-16.36	95.18	70.25	47.04	23.21	3.026 Alert		
3,400.00	3,399.10	3,395.13	3,391.90	11.86	11.85	-17.10	-17.63	100.21	72.13	48.57	23.56	3.062 Alert		
3,450.00	3,448.98	3,445.10	3,441.59	12.03	12.03	-17.22	-18.90	105.25	74.01	50.10	23.90	3.096 Alert		
3,500.00	3,498.86	3,504.94	3,491.29	12.20	12.24	-17.34	-20.18	110.28	75.89	51.60	24.28	3.125 Alert		
3,550.00	3,548.75	3,545.03	3,540.98	12.38	12.39	-17.45	-21.45	115.31	77.77	53.17	24.59	3.162 Alert		
3,600.00	3,598.63	3,605.01	3,590.67	12.55	12.60	-17.56	-22.73	120.35	79.65	54.67	24.98	3.189 Alert		
3,650.00	3,648.52	3,644.96	3,640.37	12.72	12.75	-17.66	-24.00	125.38	81.53	56.24	25.29	3.224 Alert		
3,700.00	3,698.40	3,705.08	3,690.06	12.90	12.97	-17.76	-25.28	130.41	83.41	57.74	25.67	3.249 Alert		
3,750.00	3,748.28	3,744.89	3,739.76	13.07	13.11	-17.85	-26.55	135.45	85.29	59.31	25.98	3.282 Alert		
3,800.00	3,798.17	3,805.15	3,789.45	13.25	13.33	-17.94	-27.82	140.48	87.17	60.80	26.37	3.306 Alert		
3,850.00	3,848.05	3,844.81	3,839.14	13.42	13.48	-18.02	-29.10	145.51	89.05	62.37	26.68	3.337 Alert		
3,900.00	3,897.93	3,905.22	3,888.84	13.60	13.70	-18.10	-30.37	150.55	90.93	63.87	27.07	3.359 Alert		
3,950.00	3,947.82	3,944.74	3,938.53	13.77	13.84	-18.18	-31.65	155.58	92.82	65.43	27.38	3.390 Alert		
4,000.00	3,997.70	4,005.29	3,988.23	13.95	14.06	-18.26	-32.92	160.61	94.70	66.93	27.77	3.410 Alert		
4,050.00	4,047.59	4,044.67	4,037.92	14.13	14.21	-18.33	-34.20	165.65	96.58	68.50	28.08	3.439 Alert		
4,100.00	4,097.47	4,105.36	4,087.61	14.30	14.43	-18.40	-35.47	170.68	98.46	69.99	28.47	3.458 Alert		
4,150.00	4,147.35	4,144.60	4,137.31	14.48	14.57	-18.46	-36.74	175.71	100.35	71.56	28.79	3.486 Alert		
4,200.00	4,197.24	4,205.43	4,187.00	14.66	14.80	-18.53	-38.02	180.75	102.23	73.05	29.18	3.504 Alert		
4,250.00	4,247.12	4,244.53	4,236.70	14.83	14.94	-18.59	-39.29	185.78	104.11	74.62	29.49	3.530 Alert		
4,300.00	4,297.01	4,305.51	4,286.39	15.01	15.17	-18.65	-40.57	190.81	105.99	76.11	29.88	3.547 Alert		
4,350.00	4,346.89	4,344.46	4,336.08	15.19	15.31	-18.71	-41.84	195.85	107.88	77.68	30.20	3.573 Alert		
4,400.00	4,396.77	4,405.58	4,385.78	15.37	15.54	-18.76	-43.12	200.88	109.76	79.17	30.59	3.588 Alert		
4,450.00	4,446.66	4,444.39	4,435.47	15.55	15.68	-18.82	-44.39	205.91	111.64	80.74	30.90	3.613 Alert		
4,500.00	4,496.54	4,505.65	4,485.17	15.72	15.91	-18.87	-45.66	210.95	113.53	82.23	31.30	3.627 Alert		
4,550.00	4,546.43	4,544.32	4,534.86	15.90	16.05	-18.92	-46.94	215.98	115.41	83.80	31.61	3.651 Alert		
4,600.00	4,596.31	4,605.72	4,584.55	16.08	16.28	-18.97	-48.21	221.01	117.29	85.29	32.01	3.665 Alert		
4,650.00	4,646.19	4,644.25	4,634.25	16.26	16.42	-19.01	-49.49	226.05	119.18	86.86	32.32	3.688 Alert		
4,700.00	4,696.08	4,705.79	4,683.94	16.44	16.65	-19.06	-50.76	231.08	121.06	88.35	32.72	3.700 Alert		
4,750.00	4,745.96	4,744.17	4,733.63	16.62	16.80	-19.10	-52.04	236.12	122.94	89.92	33.03	3.722 Alert		
4,800.00	4,795.85	4,805.86	4,783.33	16.80	17.03	-19.15	-53.31	241.15	124.83	91.40	33.43	3.734 Alert		
4,850.00	4,845.73	4,844.10	4,833.02	16.98	17.17	-19.19	-54.58	246.18	126.71	92.97	33.74	3.756 Alert		
4,900.00	4,895.61	4,905.93	4,882.72	17.15	17.40	-19.23	-55.86	251.22	128.60	94.46	34.14	3.767 Alert		
4,950.00	4,945.50	4,944.03	4,932.41	17.33	17.54	-19.27	-57.13	256.25	130.48	96.03	34.45	3.787 Alert		
5,000.00	4,995.38	5,006.00	4,982.10	17.51	17.77	-19.30	-58.41	261.28	132.36	97.51	34.85	3.798 Alert		
5,050.00	5,045.27	5,043.96	5,031.80	17.69	17.92	-19.34	-59.68	266.32	134.25	99.08	35.16	3.818 Alert		
5,100.00	5,095.15	5,106.08	5,081.49	17.87	18.15	-19.38	-60.96	271.35	136.13	100.57	35.56	3.828 Alert		
5,150.00	5,145.03	5,143.89	5,131.19	18.05	18.29	-19.41	-62.23	276.38	138.02	102.14	35.88	3.847 Alert		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,200.00	5,194.92	5,206.15	5,180.88	18.23	18.52	-19.45	-63.50	281.42	139.90	103.62	36.28	3.856	Alert	
5,250.00	5,244.80	5,243.82	5,230.57	18.41	18.66	-19.48	-64.78	286.45	141.78	105.19	36.59	3.875	Alert	
5,300.00	5,294.68	5,306.22	5,280.27	18.59	18.90	-19.51	-66.05	291.48	143.67	106.68	36.99	3.884	Alert	
5,350.00	5,344.57	5,343.75	5,329.96	18.77	19.04	-19.54	-67.33	296.52	145.55	108.25	37.30	3.902	Alert	
5,400.00	5,394.45	5,406.29	5,379.66	18.95	19.28	-19.57	-68.60	301.55	147.44	109.73	37.71	3.910	Alert	
5,450.00	5,444.34	5,443.68	5,429.35	19.14	19.42	-19.60	-69.88	306.58	149.32	111.30	38.02	3.927	Alert	
5,500.00	5,494.22	5,493.64	5,479.04	19.32	19.60	-19.63	-71.15	311.62	151.21	112.83	38.38	3.940	Alert	
5,550.00	5,544.10	5,543.60	5,528.74	19.50	19.79	-19.66	-72.42	316.65	153.09	114.35	38.74	3.952	Alert	
5,600.00	5,593.99	5,606.43	5,578.43	19.68	20.03	-19.69	-73.70	321.68	154.98	115.84	39.14	3.960	Alert	
5,650.00	5,643.87	5,643.53	5,628.12	19.86	20.17	-19.72	-74.97	326.72	156.86	117.41	39.45	3.976	Alert	
5,700.00	5,693.76	5,706.50	5,677.82	20.04	20.41	-19.74	-76.25	331.75	158.74	118.89	39.86	3.983	Alert	
5,750.00	5,743.64	5,743.46	5,727.51	20.22	20.55	-19.77	-77.52	336.78	160.63	120.46	40.17	3.999	Alert	
5,800.00	5,793.52	5,806.57	5,777.21	20.40	20.78	-19.79	-78.80	341.82	162.51	121.94	40.57	4.005	Alert	
5,850.00	5,843.41	5,843.39	5,826.90	20.58	20.92	-19.82	-80.07	346.85	164.40	123.51	40.89	4.021	Alert	
5,900.00	5,893.29	5,906.64	5,876.59	20.76	21.16	-19.84	-81.34	351.88	166.28	124.99	41.29	4.027	Alert	
5,950.00	5,943.18	5,943.32	5,926.29	20.95	21.30	-19.87	-82.62	356.92	168.17	126.56	41.60	4.042	Alert	
6,000.00	5,993.06	5,993.28	5,975.98	21.13	21.49	-19.89	-83.89	361.95	170.05	128.09	41.96	4.052	Alert	
6,050.00	6,042.94	6,043.25	6,025.68	21.31	21.68	-19.91	-85.17	366.98	171.94	129.62	42.32	4.063	Alert	
6,100.00	6,092.83	6,106.79	6,075.37	21.49	21.92	-19.93	-86.44	372.02	173.82	131.09	42.73	4.068	Alert	
6,150.00	6,142.71	6,143.18	6,125.06	21.67	22.06	-19.95	-87.72	377.05	175.71	132.67	43.04	4.082	Alert	
6,200.00	6,192.60	6,206.86	6,174.76	21.85	22.30	-19.98	-88.99	382.08	177.59	134.14	43.45	4.087	Alert	
6,250.00	6,242.48	6,243.11	6,224.45	22.04	22.44	-20.00	-90.26	387.12	179.48	135.72	43.76	4.101	Alert	
6,300.00	6,292.36	6,306.93	6,274.15	22.22	22.68	-20.02	-91.54	392.15	181.36	137.19	44.17	4.106	Alert	
6,350.00	6,342.25	6,343.04	6,323.84	22.40	22.81	-20.04	-92.81	397.19	183.25	138.77	44.48	4.120	Alert	
6,400.00	6,392.13	6,407.00	6,373.53	22.58	23.06	-20.06	-94.09	402.22	185.13	140.24	44.89	4.124	Alert	
6,450.00	6,442.02	6,442.96	6,423.23	22.76	23.19	-20.07	-95.36	407.25	187.02	141.82	45.20	4.138	Alert	
6,500.00	6,491.90	6,507.07	6,472.92	22.95	23.44	-20.09	-96.64	412.29	188.90	143.29	45.61	4.142	Alert	
6,550.00	6,541.78	6,542.89	6,522.62	23.13	23.57	-20.11	-97.91	417.32	190.79	144.87	45.92	4.155	Alert	
6,600.00	6,591.67	6,607.14	6,572.31	23.31	23.82	-20.13	-99.18	422.35	192.67	146.34	46.33	4.158	Alert	
6,650.00	6,641.55	6,642.82	6,622.00	23.49	23.95	-20.15	-100.46	427.39	194.56	147.92	46.64	4.171	Alert	
6,700.00	6,691.43	6,707.21	6,671.70	23.68	24.20	-20.16	-101.73	432.42	196.44	149.39	47.05	4.175	Alert	
6,750.00	6,741.32	6,742.75	6,721.39	23.86	24.33	-20.18	-103.01	437.45	198.33	150.97	47.36	4.188	Alert	
6,800.00	6,791.20	6,807.29	6,771.08	24.04	24.58	-20.20	-104.28	442.49	200.21	152.44	47.78	4.191	Alert	
6,850.00	6,841.09	6,842.68	6,820.78	24.22	24.71	-20.21	-105.56	447.52	202.10	154.01	48.08	4.203	Alert	
6,900.00	6,890.97	6,892.64	6,870.47	24.41	24.90	-20.23	-106.83	452.55	203.98	155.54	48.44	4.211	Alert	
6,950.00	6,940.85	6,942.61	6,920.17	24.59	25.09	-20.25	-108.10	457.59	205.87	157.06	48.80	4.218	Alert	
7,000.00	6,990.74	7,007.43	6,969.86	24.77	25.34	-20.26	-109.38	462.62	207.75	158.53	49.22	4.221	Alert	
7,050.00	7,040.62	7,042.54	7,019.55	24.95	25.47	-20.28	-110.65	467.65	209.64	160.11	49.53	4.233	Alert	
7,100.00	7,090.51	7,107.50	7,069.25	25.14	25.72	-20.29	-111.93	472.69	211.52	161.58	49.94	4.235	Alert	
7,150.00	7,140.39	7,142.47	7,118.94	25.32	25.85	-20.31	-113.20	477.72	213.41	163.16	50.25	4.247	Alert	
7,200.00	7,190.27	7,207.57	7,168.64	25.50	26.10	-20.32	-114.48	482.75	215.29	164.63	50.66	4.249	Alert	
7,250.00	7,240.16	7,242.39	7,218.33	25.68	26.23	-20.33	-115.75	487.79	217.18	166.21	50.97	4.261	Alert	
7,300.00	7,290.04	7,307.64	7,268.02	25.87	26.48	-20.35	-117.02	492.82	219.06	167.68	51.39	4.263	Alert	
7,350.00	7,339.93	7,342.32	7,317.72	26.05	26.62	-20.36	-118.30	497.85	220.95	169.26	51.69	4.274	Alert	
7,400.00	7,389.81	7,407.71	7,367.41	26.23	26.86	-20.37	-119.57	502.89	222.84	170.72	52.11	4.276	Alert	
7,450.00	7,439.69	7,442.25	7,417.11	26.42	27.00	-20.39	-120.85	507.92	224.72	172.30	52.42	4.287	Alert	
7,500.00	7,489.58	7,507.78	7,466.80	26.60	27.25	-20.40	-122.12	512.95	226.61	173.77	52.83	4.289	Alert	
7,550.00	7,539.46	7,542.18	7,516.49	26.78	27.38	-20.41	-123.40	517.99	228.49	175.35	53.14	4.300	Alert	
7,600.00	7,589.35	7,607.85	7,566.19	26.96	27.63	-20.43	-124.67	523.02	230.38	176.82	53.56	4.301	Alert	
7,650.00	7,639.23	7,642.11	7,615.88	27.15	27.76	-20.44	-125.94	528.05	232.26	178.40	53.86	4.312	Alert	
7,700.00	7,689.11	7,707.93	7,665.57	27.33	28.01	-20.45	-127.22	533.09	234.15	179.86	54.28	4.313	Alert	
7,750.00	7,739.00	7,742.04	7,715.27	27.51	28.14	-20.46	-128.49	538.12	236.03	181.45	54.59	4.324	Alert	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2:00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
7,800.00	7,788.88	7,792.00	7,764.96	27.70	28.33	-20.47	-129.77	543.15	237.92	182.97	54.95	4.330	Alert	
7,850.00	7,838.76	7,841.97	7,814.66	27.88	28.52	-20.48	-131.04	548.19	239.80	184.49	55.31	4.336	Alert	
7,900.00	7,888.65	7,908.07	7,864.35	28.06	28.77	-20.50	-132.32	553.22	241.69	185.96	55.73	4.337	Alert	
7,950.00	7,938.53	7,941.90	7,914.04	28.25	28.90	-20.51	-133.59	558.26	243.57	187.54	56.03	4.347	Alert	
8,000.00	7,988.42	8,008.14	7,963.74	28.43	29.16	-20.52	-134.86	563.29	245.46	189.00	56.46	4.348	Alert	
8,050.00	8,038.30	8,041.83	8,013.43	28.61	29.29	-20.53	-136.14	568.32	247.35	190.59	56.76	4.358	Alert	
8,100.00	8,088.18	8,108.21	8,063.13	28.80	29.54	-20.54	-137.41	573.36	249.23	192.05	57.18	4.359	Alert	
8,150.00	8,138.07	8,141.75	8,112.82	28.98	29.67	-20.55	-138.69	578.39	251.12	193.63	57.48	4.369	Alert	
8,200.00	8,187.95	8,191.72	8,162.51	29.16	29.86	-20.56	-139.96	583.42	253.00	195.16	57.85	4.374	Alert	
8,250.00	8,237.84	8,241.68	8,212.21	29.35	30.05	-20.57	-141.24	588.46	254.89	196.68	58.21	4.379	Alert	
8,300.00	8,287.72	8,308.35	8,261.90	29.53	30.31	-20.58	-142.51	593.49	256.77	198.14	58.63	4.379	Alert	
8,350.00	8,337.60	8,341.61	8,311.60	29.71	30.43	-20.59	-143.78	598.52	258.66	199.73	58.93	4.389	Alert	
8,400.00	8,387.49	8,391.58	8,361.29	29.90	30.62	-20.60	-145.06	603.56	260.54	201.25	59.29	4.394	Alert	
8,450.00	8,437.37	8,441.54	8,410.98	30.08	30.81	-20.61	-146.33	608.59	262.43	202.77	59.66	4.399	Alert	
8,500.00	8,487.26	8,508.50	8,460.68	30.27	31.07	-20.62	-147.61	613.62	264.31	204.23	60.08	4.399	Alert	
8,550.00	8,537.14	8,541.47	8,510.37	30.45	31.20	-20.63	-148.88	618.66	266.20	205.82	60.38	4.409	Alert	
8,600.00	8,587.02	8,608.57	8,560.06	30.63	31.45	-20.64	-150.16	623.69	268.09	207.28	60.81	4.409	Alert	
8,650.00	8,636.91	8,641.40	8,609.76	30.82	31.58	-20.65	-151.43	628.72	269.97	208.86	61.11	4.418	Alert	
8,700.00	8,686.79	8,691.36	8,659.45	31.00	31.77	-20.66	-152.70	633.76	271.86	210.39	61.47	4.423	Alert	
8,750.00	8,736.68	8,741.33	8,709.15	31.18	31.96	-20.67	-153.98	638.79	273.74	211.91	61.83	4.427	Alert	
8,800.00	8,786.56	8,808.71	8,758.84	31.37	32.22	-20.67	-155.25	643.82	275.63	213.37	62.26	4.427	Alert	
8,850.00	8,836.44	8,841.26	8,808.53	31.55	32.35	-20.68	-156.53	648.86	277.51	214.95	62.56	4.436	Alert	
8,900.00	8,886.33	8,891.22	8,858.23	31.73	32.54	-20.69	-157.80	653.89	279.40	216.48	62.92	4.440	Alert	
8,950.00	8,936.21	8,941.18	8,907.92	31.92	32.73	-20.70	-159.08	658.92	281.28	218.00	63.28	4.445	Alert	
9,000.00	8,986.10	8,991.15	8,957.62	32.10	32.92	-20.71	-160.35	663.96	283.17	219.52	63.65	4.449	Alert	
9,050.00	9,035.98	9,041.11	9,007.31	32.29	33.11	-20.72	-161.62	668.99	285.06	221.05	64.01	4.453	Alert	
9,100.00	9,085.86	9,091.08	9,057.00	32.47	33.30	-20.72	-162.90	674.02	286.94	222.57	64.37	4.457	Alert	
9,150.00	9,135.75	9,141.04	9,106.70	32.65	33.49	-20.73	-164.17	679.06	288.83	224.09	64.74	4.462	Alert	
9,200.00	9,185.63	9,191.01	9,156.39	32.84	33.69	-20.74	-165.45	684.09	290.71	225.61	65.10	4.466	Alert	
9,250.00	9,235.51	9,240.97	9,206.09	33.02	33.88	-20.75	-166.72	689.12	292.60	227.14	65.46	4.470	Alert	
9,300.00	9,285.40	9,290.94	9,255.78	33.21	34.07	-20.75	-168.00	694.16	294.48	228.66	65.83	4.474	Alert	
9,350.00	9,335.28	9,340.90	9,305.47	33.39	34.26	-20.76	-169.27	699.19	296.37	230.18	66.19	4.478	Alert	
9,400.00	9,385.17	9,409.14	9,355.17	33.57	34.52	-20.77	-170.54	704.22	298.25	231.64	66.62	4.477	Alert	
9,450.00	9,435.05	9,440.83	9,404.86	33.76	34.64	-20.78	-171.82	709.26	300.14	233.23	66.91	4.485	Alert	
9,500.00	9,484.93	9,509.21	9,454.56	33.94	34.91	-20.78	-173.09	714.29	302.03	234.68	67.34	4.485	Alert	
9,550.00	9,534.82	9,540.76	9,504.25	34.13	35.03	-20.79	-174.37	719.33	303.91	236.27	67.64	4.493	Alert	
9,600.00	9,584.70	9,609.28	9,553.94	34.31	35.29	-20.80	-175.64	724.36	305.80	237.73	68.07	4.492	Alert	
9,650.00	9,634.59	9,640.69	9,603.64	34.49	35.41	-20.81	-176.92	729.39	307.68	239.32	68.37	4.500	Alert	
9,700.00	9,684.47	9,690.65	9,653.33	34.68	35.60	-20.81	-178.19	734.43	309.57	240.84	68.73	4.504	Alert	
9,750.00	9,734.35	9,740.62	9,703.02	34.86	35.79	-20.82	-179.46	739.46	311.45	242.36	69.09	4.508	Alert	
9,800.00	9,784.24	9,790.58	9,752.72	35.05	35.99	-20.83	-180.74	744.49	313.34	243.88	69.46	4.511	Alert	
9,850.00	9,834.12	9,840.54	9,802.41	35.23	36.18	-20.83	-182.01	749.53	315.23	245.41	69.82	4.515	Alert	
9,900.00	9,884.01	9,909.49	9,852.11	35.41	36.44	-20.84	-183.29	754.56	317.11	246.86	70.25	4.514	Alert	
9,950.00	9,933.89	9,940.47	9,901.80	35.60	36.56	-20.85	-184.56	759.59	319.00	248.45	70.55	4.522	Alert	
10,000.00	9,983.77	10,009.56	9,951.49	35.78	36.83	-20.85	-185.84	764.63	320.88	249.90	70.98	4.521	Alert	
10,050.00	10,033.66	10,040.40	10,001.19	35.97	36.94	-20.86	-187.11	769.66	322.77	251.49	71.27	4.529	Alert	
10,100.00	10,083.54	10,109.63	10,050.88	36.15	37.21	-20.86	-188.38	774.69	324.65	252.95	71.71	4.527	Alert	
10,150.00	10,133.43	10,140.33	10,100.58	36.34	37.33	-20.87	-189.66	779.73	326.54	254.54	72.00	4.535	Alert	
10,200.00	10,183.31	10,209.71	10,150.27	36.52	37.59	-20.88	-190.93	784.76	328.43	255.99	72.44	4.534	Alert	
10,250.00	10,233.19	10,240.26	10,199.96	36.70	37.71	-20.88	-192.21	789.79	330.31	257.58	72.73	4.542	Alert	
10,300.00	10,283.08	10,290.22	10,249.66	36.89	37.90	-20.89	-193.48	794.83	332.20	259.10	73.09	4.545	Alert	
10,350.00	10,332.96	10,340.19	10,299.35	37.07	38.10	-20.89	-194.76	799.86	334.08	260.63	73.46	4.548	Alert	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)						
10,400.00	10,382.85	10,394.76	10,353.67	37.26	38.30	-20.92	-196.06	804.99	335.63	261.77	73.86	4.544	Alert	
10,450.00	10,432.73	10,449.44	10,408.16	37.44	38.51	-20.97	-197.17	809.38	336.48	262.22	74.26	4.531	Alert	
10,500.00	10,482.61	10,504.13	10,462.72	37.62	38.71	-21.05	-198.09	813.01	336.64	261.99	74.64	4.510	Alert	
10,550.00	10,532.50	10,558.81	10,517.32	37.81	38.91	-21.16	-198.81	815.88	336.09	261.08	75.02	4.480	Alert	
10,600.00	10,582.38	10,613.46	10,571.92	37.99	39.10	-21.31	-199.35	817.99	334.86	259.47	75.39	4.442	Alert	
10,650.00	10,632.26	10,668.05	10,626.49	38.18	39.30	-21.48	-199.69	819.35	332.93	257.19	75.74	4.396	Alert	
10,700.00	10,682.17	10,722.58	10,681.02	38.36	39.48	-21.66	-199.84	819.95	330.56	254.48	76.08	4.345	Alert	
10,750.00	10,732.10	10,773.86	10,732.30	38.54	39.66	-21.81	-199.85	819.98	328.28	251.86	76.43	4.295	Alert	
10,800.00	10,782.07	10,823.83	10,782.27	38.72	39.82	-21.92	-199.85	819.98	326.58	249.81	76.78	4.254	Alert	
10,850.00	10,832.06	10,873.81	10,832.26	38.90	39.99	-21.99	-199.85	819.98	325.49	248.36	77.13	4.220	Alert	
10,900.00	10,882.05	10,923.81	10,882.25	39.08	40.15	-22.03	-199.85	819.98	325.01	247.53	77.48	4.195	Alert	
10,949.02	10,931.08	10,972.84	10,931.28	39.24	40.31	89.97	-199.85	819.98	324.92	247.11	77.81	4.176	Alert	
10,950.00	10,932.05	10,973.81	10,932.25	39.25	40.32	89.97	-199.85	819.98	324.98	247.16	77.82	4.176	Alert	
11,000.00	10,982.05	11,023.81	10,982.25	39.42	40.48	89.97	-199.85	819.98	324.98	246.82	78.16	4.158	Alert	
11,050.00	11,032.05	11,073.81	11,032.25	39.59	40.65	89.97	-199.85	819.98	324.98	246.48	78.50	4.140	Alert	
11,100.00	11,082.05	11,123.88	11,082.30	39.76	40.81	89.78	-198.76	819.97	324.98	246.14	78.84	4.122	Alert	
11,111.28	11,093.34	11,135.15	11,093.54	39.79	40.85	89.64	-197.96	819.97	324.97	246.06	78.92	4.118	Alert	
11,150.00	11,132.05	11,173.47	11,131.60	39.92	40.97	88.87	-193.58	819.94	325.00	245.80	79.20	4.104	Alert	
11,200.00	11,182.05	11,221.81	11,179.05	40.09	41.12	87.26	-184.44	819.88	325.27	245.69	79.58	4.087	Alert	
11,250.00	11,232.05	11,268.29	11,232.80	40.26	41.26	85.06	-171.90	819.80	326.13	246.14	79.98	4.077	Alert	
11,300.00	11,282.03	11,312.82	11,265.58	40.43	41.39	82.76	-156.54	819.71	327.89	247.52	80.37	4.080	Alert	
11,350.00	11,331.74	11,356.29	11,305.10	40.60	41.50	80.12	-138.45	819.59	330.40	249.70	80.69	4.094	Alert	
11,400.00	11,380.81	11,398.86	11,342.36	40.76	41.60	77.59	-117.88	819.47	333.51	252.58	80.93	4.121	Alert	
11,450.00	11,428.85	11,440.64	11,377.35	40.91	41.69	75.19	-95.06	819.32	337.13	256.07	81.06	4.159	Alert	
11,500.00	11,475.52	11,481.71	11,410.02	41.05	41.77	72.93	-70.20	819.17	341.12	260.04	81.07	4.207	Alert	
11,550.00	11,520.44	11,522.14	11,440.38	41.18	41.84	70.82	-43.51	819.00	345.37	264.39	80.98	4.265	Alert	
11,600.00	11,563.29	11,562.01	11,468.39	41.30	41.90	68.88	-15.15	818.82	349.76	268.99	80.77	4.330	Alert	
11,650.00	11,603.72	11,601.38	11,494.06	41.41	41.95	67.09	14.69	818.63	354.17	273.70	80.48	4.401	Alert	
11,700.00	11,641.45	11,640.31	11,517.36	41.50	41.99	65.47	45.87	818.44	358.52	278.40	80.11	4.475	Alert	
11,750.00	11,676.17	11,678.86	11,538.29	41.58	42.02	64.02	78.23	818.23	362.69	282.98	79.71	4.550	Alert	
11,800.00	11,707.62	11,717.07	11,556.85	41.65	42.05	62.74	111.62	818.03	366.60	287.32	79.28	4.624	Alert	
11,850.00	11,735.57	11,755.00	11,573.03	41.71	42.07	61.63	145.92	817.81	370.18	291.31	78.87	4.693	Alert	
11,900.00	11,759.81	11,792.69	11,586.83	41.75	42.09	60.68	180.98	817.59	373.36	294.86	78.49	4.756	Alert	
11,950.00	11,780.14	11,830.18	11,598.24	41.79	42.10	59.90	216.69	817.37	376.08	297.90	78.18	4.810	Alert	
12,000.00	11,796.41	11,867.50	11,607.25	41.84	42.11	59.28	252.90	817.14	378.31	300.35	77.95	4.853	Alert	
12,050.00	11,808.50	11,904.71	11,613.87	41.94	42.12	58.82	289.50	816.91	379.99	302.16	77.82	4.883	Alert	
12,100.00	11,816.32	11,941.82	11,618.09	42.05	42.14	58.52	326.37	816.68	381.11	303.29	77.81	4.898	Alert	
12,150.00	11,819.80	11,978.89	11,619.92	42.16	42.17	58.38	363.39	816.44	381.65	303.71	77.93	4.897	Alert	
12,200.00	11,820.00	12,025.50	11,620.00	42.28	42.22	58.36	410.00	816.15	381.69	303.53	78.16	4.883	Alert	
12,250.00	11,820.00	12,075.50	11,620.00	42.41	42.31	58.36	460.00	815.84	381.69	303.27	78.42	4.867	Alert	
12,300.00	11,820.00	12,125.50	11,620.00	42.54	42.43	58.36	510.00	815.52	381.69	303.00	78.69	4.850	Alert	
12,350.00	11,820.00	12,175.50	11,620.00	42.70	42.57	58.36	559.99	815.21	381.69	302.70	78.99	4.832	Alert	
12,400.00	11,820.00	12,225.50	11,620.00	42.86	42.73	58.36	609.99	814.90	381.69	302.38	79.31	4.813	Alert	
12,450.00	11,820.00	12,275.50	11,620.00	43.04	42.90	58.36	659.99	814.58	381.69	302.04	79.65	4.792	Alert	
12,500.00	11,820.00	12,325.50	11,620.00	43.22	43.08	58.36	709.99	814.27	381.69	301.69	80.00	4.771	Alert	
12,550.00	11,820.00	12,375.50	11,620.00	43.42	43.28	58.36	759.99	813.96	381.69	301.31	80.38	4.748	Alert	
12,600.00	11,820.00	12,425.50	11,620.00	43.62	43.49	58.36	809.99	813.64	381.69	300.92	80.77	4.725	Alert	
12,650.00	11,820.00	12,475.50	11,620.00	43.84	43.71	58.36	859.99	813.33	381.69	300.50	81.19	4.701	Alert	
12,700.00	11,820.00	12,525.50	11,620.00	44.07	43.94	58.36	909.99	813.01	381.69	300.07	81.62	4.676	Alert	
12,750.00	11,820.00	12,575.50	11,620.00	44.31	44.18	58.36	959.99	812.70	381.69	299.61	82.08	4.650	Alert	
12,800.00	11,820.00	12,625.50	11,620.00	44.55	44.43	58.36	1,009.99	812.39	381.69	299.14	82.55	4.624	Alert	
12,850.00	11,820.00	12,675.50	11,620.00	44.82	44.69	58.36	1,059.98	812.07	381.69	298.65	83.04	4.596	Alert	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface	Offset Wellbore Centre		Distance		Minimum Separation	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
12,900.00	11,820.00	12,725.50	11,620.00	45.08	44.96	58.36	1,109.98	811.76	381.69	298.14	83.54	4.569	Alert		
12,950.00	11,820.00	12,775.50	11,620.00	45.37	45.24	58.36	1,159.98	811.44	381.69	297.62	84.07	4.540	Alert		
13,000.00	11,820.00	12,825.50	11,620.00	45.65	45.53	58.36	1,209.98	811.13	381.69	297.08	84.61	4.511	Alert		
13,050.00	11,820.00	12,875.50	11,620.00	45.95	45.83	58.36	1,259.98	810.82	381.69	296.52	85.17	4.481	Alert		
13,100.00	11,820.00	12,925.50	11,620.00	46.26	46.14	58.36	1,309.98	810.50	381.69	295.95	85.74	4.452	Alert		
13,150.00	11,820.00	12,975.50	11,620.00	46.58	46.46	58.36	1,359.98	810.19	381.69	295.35	86.33	4.421	Alert		
13,200.00	11,820.00	13,025.50	11,620.00	46.90	46.79	58.36	1,409.98	809.88	381.69	294.75	86.94	4.390	Alert		
13,250.00	11,820.00	13,075.50	11,620.00	47.24	47.13	58.36	1,459.98	809.56	381.69	294.13	87.56	4.359	Alert		
13,300.00	11,820.00	13,125.50	11,620.00	47.58	47.47	58.36	1,509.98	809.25	381.69	293.49	88.19	4.328	Alert		
13,350.00	11,820.00	13,175.50	11,620.00	47.93	47.82	58.36	1,559.97	808.93	381.69	292.84	88.85	4.296	Alert		
13,400.00	11,820.00	13,225.50	11,620.00	48.29	48.19	58.36	1,609.97	808.62	381.69	292.18	89.51	4.264	Alert		
13,450.00	11,820.00	13,275.50	11,620.00	48.66	48.56	58.36	1,659.97	808.31	381.69	291.49	90.19	4.232	Alert		
13,500.00	11,820.00	13,325.50	11,620.00	49.04	48.93	58.36	1,709.97	807.99	381.69	290.80	90.88	4.200	Alert		
13,550.00	11,820.00	13,375.50	11,620.00	49.42	49.32	58.36	1,759.97	807.68	381.69	290.10	91.59	4.167	Alert		
13,600.00	11,820.00	13,425.50	11,620.00	49.81	49.71	58.36	1,809.97	807.37	381.69	289.38	92.31	4.135	Alert		
13,650.00	11,820.00	13,475.50	11,620.00	50.21	50.11	58.36	1,859.97	807.05	381.68	288.64	93.04	4.102	Alert		
13,700.00	11,820.00	13,525.50	11,620.00	50.62	50.52	58.36	1,909.97	806.74	381.68	287.90	93.78	4.070	Alert		
13,750.00	11,820.00	13,575.50	11,620.00	51.04	50.94	58.36	1,959.97	806.42	381.68	287.14	94.54	4.037	Alert		
13,800.00	11,820.00	13,625.50	11,620.00	51.45	51.36	58.36	2,009.97	806.11	381.68	286.37	95.31	4.005	Alert		
13,850.00	11,820.00	13,675.50	11,620.00	51.88	51.79	58.36	2,059.96	805.80	381.68	285.59	96.09	3.972	Alert		
13,900.00	11,820.00	13,725.50	11,620.00	52.31	52.22	58.36	2,109.96	805.48	381.68	284.80	96.88	3.940	Alert		
13,950.00	11,820.00	13,775.50	11,620.00	52.76	52.66	58.36	2,159.96	805.17	381.68	283.99	97.69	3.907	Alert		
14,000.00	11,820.00	13,825.50	11,620.00	53.20	53.11	58.36	2,209.96	804.85	381.68	283.18	98.50	3.875	Alert		
14,050.00	11,820.00	13,875.50	11,620.00	53.66	53.57	58.36	2,259.96	804.54	381.68	282.36	99.33	3.843	Alert		
14,100.00	11,820.00	13,925.50	11,620.00	54.11	54.02	58.36	2,309.96	804.23	381.68	281.52	100.16	3.811	Alert		
14,150.00	11,820.00	13,975.50	11,620.00	54.58	54.49	58.36	2,359.96	803.91	381.68	280.68	101.01	3.779	Alert		
14,200.00	11,820.00	14,025.50	11,620.00	55.05	54.96	58.36	2,409.96	803.60	381.68	279.82	101.86	3.747	Alert		
14,250.00	11,820.00	14,075.50	11,620.00	55.53	55.44	58.36	2,459.96	803.29	381.68	278.96	102.73	3.716	Alert		
14,300.00	11,820.00	14,125.50	11,620.00	56.01	55.92	58.36	2,509.96	802.97	381.68	278.09	103.60	3.684	Alert		
14,350.00	11,820.00	14,175.50	11,620.00	56.50	56.41	58.36	2,559.96	802.66	381.68	277.20	104.48	3.653	Alert		
14,400.00	11,820.00	14,225.50	11,620.00	56.99	56.90	58.36	2,609.95	802.34	381.68	276.31	105.37	3.622	Alert		
14,450.00	11,820.00	14,275.50	11,620.00	57.49	57.40	58.36	2,659.95	802.03	381.68	275.41	106.27	3.591	Alert		
14,500.00	11,820.00	14,325.50	11,620.00	57.98	57.90	58.36	2,709.95	801.72	381.68	274.50	107.18	3.561	Alert		
14,550.00	11,820.00	14,375.50	11,620.00	58.49	58.41	58.36	2,759.95	801.40	381.68	273.58	108.10	3.531	Alert		
14,600.00	11,820.00	14,425.50	11,620.00	59.00	58.92	58.36	2,809.95	801.09	381.68	272.66	109.02	3.501	Alert		
14,650.00	11,820.00	14,475.50	11,620.00	59.52	59.44	58.36	2,859.95	800.77	381.68	271.73	109.96	3.471	Alert		
14,700.00	11,820.00	14,525.50	11,620.00	60.04	59.96	58.36	2,909.95	800.46	381.68	270.79	110.89	3.442	Alert		
14,750.00	11,820.00	14,575.50	11,620.00	60.57	60.48	58.36	2,959.95	800.15	381.68	269.84	111.84	3.413	Alert		
14,800.00	11,820.00	14,625.50	11,620.00	61.09	61.01	58.36	3,009.95	799.83	381.68	268.88	112.80	3.384	Alert		
14,850.00	11,820.00	14,675.50	11,620.00	61.63	61.54	58.36	3,059.95	799.52	381.68	267.92	113.76	3.355	Alert		
14,900.00	11,820.00	14,725.50	11,620.00	62.16	62.08	58.36	3,109.94	799.21	381.68	266.95	114.73	3.327	Alert		
14,950.00	11,820.00	14,775.50	11,620.00	62.70	62.62	58.36	3,159.94	798.89	381.68	265.98	115.70	3.299	Alert		
15,000.00	11,820.00	14,825.50	11,620.00	63.25	63.17	58.36	3,209.94	798.58	381.68	265.00	116.68	3.271	Alert		
15,050.00	11,820.00	14,875.50	11,620.00	63.80	63.71	58.36	3,259.94	798.26	381.68	264.01	117.67	3.244	Alert		
15,100.00	11,820.00	14,925.50	11,620.00	64.35	64.27	58.36	3,309.94	797.95	381.68	263.01	118.67	3.216	Alert		
15,150.00	11,820.00	14,975.50	11,620.00	64.90	64.82	58.36	3,359.94	797.64	381.68	262.01	119.67	3.189	Alert		
15,200.00	11,820.00	15,025.50	11,620.00	65.46	65.38	58.36	3,409.94	797.32	381.68	261.01	120.67	3.163	Alert		
15,250.00	11,820.00	15,075.50	11,620.00	66.02	65.94	58.36	3,459.94	797.01	381.68	259.99	121.69	3.137	Alert		
15,300.00	11,820.00	15,125.50	11,620.00	66.59	66.51	58.36	3,509.94	796.69	381.68	258.98	122.70	3.111	Alert		
15,350.00	11,820.00	15,175.50	11,620.00	67.16	67.08	58.36	3,559.94	796.38	381.68	257.95	123.73	3.085	Alert		
15,400.00	11,820.00	15,225.50	11,620.00	67.73	67.65	58.36	3,609.93	796.07	381.68	256.92	124.75	3.059	Alert		
15,450.00	11,820.00	15,275.50	11,620.00	68.30	68.22	58.36	3,659.93	795.75	381.68	255.89	125.79	3.034	Alert		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
15,500.00	11,820.00	15,325.50	11,620.00	68.88	68.80	58.36	3,709.93	795.44	381.68	254.85	126.83	3.009	Alert
15,550.00	11,820.00	15,375.50	11,620.00	69.46	69.38	58.36	3,759.93	795.13	381.68	253.81	127.87	2.985	Alert
15,600.00	11,820.00	15,425.50	11,620.00	70.04	69.96	58.36	3,809.93	794.81	381.68	252.76	128.92	2.961	Alert
15,650.00	11,820.00	15,475.50	11,620.00	70.63	70.55	58.36	3,859.93	794.50	381.68	251.71	129.97	2.937	Alert
15,700.00	11,820.00	15,525.50	11,620.00	71.21	71.14	58.36	3,909.93	794.18	381.68	250.65	131.03	2.913	Alert
15,750.00	11,820.00	15,575.50	11,620.00	71.80	71.73	58.36	3,959.93	793.87	381.68	249.58	132.09	2.889	Alert
15,800.00	11,820.00	15,625.50	11,620.00	72.40	72.32	58.36	4,009.93	793.56	381.68	248.52	133.16	2.866	Alert
15,850.00	11,820.00	15,675.50	11,620.00	72.99	72.92	58.36	4,059.93	793.24	381.68	247.45	134.23	2.843	Alert
15,900.00	11,820.00	15,725.50	11,620.00	73.59	73.52	58.36	4,109.92	792.93	381.68	246.37	135.30	2.821	Alert
15,950.00	11,820.00	15,775.50	11,620.00	74.19	74.12	58.36	4,159.92	792.61	381.68	245.29	136.38	2.799	Alert
16,000.00	11,820.00	15,825.50	11,620.00	74.79	74.72	58.36	4,209.92	792.30	381.68	244.21	137.47	2.777	Alert
16,050.00	11,820.00	15,875.50	11,620.00	75.40	75.32	58.36	4,259.92	791.99	381.68	243.12	138.55	2.755	Alert
16,100.00	11,820.00	15,925.50	11,620.00	76.01	75.93	58.36	4,309.92	791.67	381.68	242.03	139.64	2.733	Alert
16,150.00	11,820.00	15,975.50	11,620.00	76.62	76.54	58.36	4,359.92	791.36	381.68	240.94	140.74	2.712	Alert
16,200.00	11,820.00	16,025.50	11,620.00	77.23	77.15	58.36	4,409.92	791.05	381.68	239.84	141.84	2.691	Alert
16,250.00	11,820.00	16,075.50	11,620.00	77.84	77.77	58.36	4,459.92	790.73	381.68	238.74	142.94	2.670	Alert
16,300.00	11,820.00	16,125.50	11,620.00	78.45	78.38	58.36	4,509.92	790.42	381.68	237.63	144.04	2.650	Alert
16,350.00	11,820.00	16,175.50	11,620.00	79.07	79.00	58.36	4,559.92	790.10	381.68	236.52	145.15	2.629	Alert
16,400.00	11,820.00	16,225.50	11,620.00	79.69	79.62	58.36	4,609.91	789.79	381.68	235.41	146.26	2.609	Alert
16,450.00	11,820.00	16,275.50	11,620.00	80.31	80.24	58.36	4,659.91	789.48	381.68	234.30	147.38	2.590	Alert
16,500.00	11,820.00	16,325.50	11,620.00	80.93	80.86	58.36	4,709.91	789.16	381.68	233.18	148.50	2.570	Alert
16,550.00	11,820.00	16,375.50	11,620.00	81.56	81.49	58.36	4,759.91	788.85	381.68	232.06	149.62	2.551	Alert
16,600.00	11,820.00	16,425.50	11,620.00	82.19	82.11	58.36	4,809.91	788.54	381.68	230.93	150.74	2.532	Alert
16,650.00	11,820.00	16,475.50	11,620.00	82.81	82.74	58.36	4,859.91	788.22	381.67	229.80	151.87	2.513	Alert
16,700.00	11,820.00	16,525.50	11,620.00	83.44	83.37	58.36	4,909.91	787.91	381.67	228.67	153.00	2.495	Minor Risk
16,750.00	11,820.00	16,575.50	11,620.00	84.07	84.00	58.36	4,959.91	787.59	381.67	227.54	154.13	2.476	Minor Risk
16,800.00	11,820.00	16,625.50	11,620.00	84.71	84.63	58.36	5,009.91	787.28	381.67	226.41	155.27	2.458	Minor Risk
16,850.00	11,820.00	16,675.50	11,620.00	85.34	85.27	58.36	5,059.91	786.97	381.67	225.27	156.41	2.440	Minor Risk
16,900.00	11,820.00	16,725.50	11,620.00	85.98	85.90	58.36	5,109.90	786.65	381.67	224.13	157.55	2.423	Minor Risk
16,950.00	11,820.00	16,775.50	11,620.00	86.61	86.54	58.36	5,159.90	786.34	381.67	222.98	158.69	2.405	Minor Risk
17,000.00	11,820.00	16,825.50	11,620.00	87.25	87.18	58.36	5,209.90	786.02	381.67	221.84	159.84	2.388	Minor Risk
17,050.00	11,820.00	16,875.50	11,620.00	87.89	87.82	58.36	5,259.90	785.71	381.67	220.69	160.99	2.371	Minor Risk
17,100.00	11,820.00	16,925.50	11,620.00	88.53	88.46	58.36	5,309.90	785.40	381.67	219.54	162.14	2.354	Minor Risk
17,150.00	11,820.00	16,975.50	11,620.00	89.18	89.10	58.36	5,359.90	785.08	381.67	218.38	163.29	2.337	Minor Risk
17,200.00	11,820.00	17,025.50	11,620.00	89.82	89.75	58.36	5,409.90	784.77	381.67	217.23	164.45	2.321	Minor Risk
17,250.00	11,820.00	17,075.50	11,620.00	90.47	90.39	58.36	5,459.90	784.46	381.67	216.07	165.60	2.305	Minor Risk
17,300.00	11,820.00	17,125.50	11,620.00	91.11	91.04	58.36	5,509.90	784.14	381.67	214.91	166.76	2.289	Minor Risk
17,350.00	11,820.00	17,175.50	11,620.00	91.76	91.69	58.36	5,559.90	783.83	381.67	213.75	167.93	2.273	Minor Risk
17,400.00	11,820.00	17,225.50	11,620.00	92.41	92.34	58.36	5,609.90	783.51	381.67	212.58	169.09	2.257	Minor Risk
17,450.00	11,820.00	17,275.50	11,620.00	93.06	92.99	58.36	5,659.89	783.20	381.67	211.41	170.26	2.242	Minor Risk
17,500.00	11,820.00	17,325.50	11,620.00	93.71	93.64	58.36	5,709.89	782.89	381.67	210.25	171.43	2.226	Minor Risk
17,550.00	11,820.00	17,375.50	11,620.00	94.36	94.29	58.36	5,759.89	782.57	381.67	209.07	172.60	2.211	Minor Risk
17,600.00	11,820.00	17,425.50	11,620.00	95.02	94.94	58.36	5,809.89	782.26	381.67	207.90	173.77	2.196	Minor Risk
17,650.00	11,820.00	17,475.50	11,620.00	95.67	95.60	58.36	5,859.89	781.94	381.67	206.73	174.94	2.182	Minor Risk
17,700.00	11,820.00	17,525.50	11,620.00	96.33	96.25	58.36	5,909.89	781.63	381.67	205.55	176.12	2.167	Minor Risk
17,750.00	11,820.00	17,575.50	11,620.00	96.98	96.91	58.36	5,959.89	781.32	381.67	204.37	177.30	2.153	Minor Risk
17,800.00	11,820.00	17,625.50	11,620.00	97.64	97.57	58.36	6,009.89	781.00	381.67	203.19	178.48	2.138	Minor Risk
17,850.00	11,820.00	17,675.50	11,620.00	98.30	98.23	58.36	6,059.89	780.69	381.67	202.01	179.66	2.124	Minor Risk
17,900.00	11,820.00	17,725.50	11,620.00	98.96	98.89	58.36	6,109.89	780.38	381.67	200.83	180.84	2.111	Minor Risk
17,950.00	11,820.00	17,775.50	11,620.00	99.62	99.55	58.36	6,159.88	780.06	381.67	199.64	182.03	2.097	Minor Risk
18,000.00	11,820.00	17,825.50	11,620.00	100.28	100.21	58.36	6,209.88	779.75	381.67	198.45	183.22	2.083	Minor Risk
18,050.00	11,820.00	17,875.50	11,620.00	100.95	100.87	58.36	6,259.88	779.43	381.67	197.27	184.40	2.070	Minor Risk

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
18,100.00	11,820.00	17,925.50	11,620.00	101.61	101.54	58.36	6,309.88	779.12	381.67	196.08	185.59	2.056	Minor Risk		
18,150.00	11,820.00	17,975.50	11,620.00	102.27	102.20	58.36	6,359.88	778.81	381.67	194.88	186.79	2.043	Minor Risk		
18,200.00	11,820.00	18,025.50	11,620.00	102.94	102.87	58.36	6,409.88	778.49	381.67	193.69	187.98	2.030	Minor Risk		
18,250.00	11,820.00	18,075.50	11,620.00	103.61	103.53	58.36	6,459.88	778.18	381.67	192.50	189.17	2.018	Minor Risk		
18,300.00	11,820.00	18,125.50	11,620.00	104.27	104.20	58.36	6,509.88	777.86	381.67	191.30	190.37	2.005	Minor Risk		
18,350.00	11,820.00	18,175.50	11,620.00	104.94	104.87	58.36	6,559.88	777.55	381.67	190.10	191.57	1.992	Minor Risk		
18,400.00	11,820.00	18,225.50	11,620.00	105.61	105.54	58.36	6,609.88	777.24	381.67	188.90	192.77	1.980	Minor Risk		
18,450.00	11,820.00	18,275.50	11,620.00	106.28	106.21	58.36	6,659.87	776.92	381.67	187.70	193.97	1.968	Minor Risk		
18,500.00	11,820.00	18,325.50	11,620.00	106.95	106.88	58.36	6,709.87	776.61	381.67	186.50	195.17	1.956	Minor Risk		
18,550.00	11,820.00	18,375.50	11,620.00	107.62	107.55	58.36	6,759.87	776.30	381.67	185.30	196.37	1.944	Minor Risk		
18,600.00	11,820.00	18,425.50	11,620.00	108.29	108.22	58.36	6,809.87	775.98	381.67	184.09	197.58	1.932	Minor Risk		
18,650.00	11,820.00	18,475.50	11,620.00	108.96	108.89	58.36	6,859.87	775.67	381.67	182.88	198.78	1.920	Minor Risk		
18,700.00	11,820.00	18,525.50	11,620.00	109.64	109.56	58.36	6,909.87	775.35	381.67	181.68	199.99	1.908	Minor Risk		
18,750.00	11,820.00	18,575.50	11,620.00	110.31	110.24	58.36	6,959.87	775.04	381.67	180.47	201.20	1.897	Minor Risk		
18,800.00	11,820.00	18,625.50	11,620.00	110.98	110.91	58.36	7,009.87	774.73	381.67	179.26	202.41	1.886	Minor Risk		
18,850.00	11,820.00	18,675.50	11,620.00	111.66	111.59	58.36	7,059.87	774.41	381.67	178.05	203.62	1.874	Minor Risk		
18,900.00	11,820.00	18,725.50	11,620.00	112.34	112.26	58.36	7,109.87	774.10	381.67	176.83	204.83	1.863	Minor Risk		
18,950.00	11,820.00	18,775.50	11,620.00	113.01	112.94	58.36	7,159.86	773.79	381.67	175.62	206.05	1.852	Minor Risk		
19,000.00	11,820.00	18,825.50	11,620.00	113.69	113.62	58.36	7,209.86	773.47	381.67	174.41	207.26	1.841	Minor Risk		
19,050.00	11,820.00	18,875.50	11,620.00	114.37	114.30	58.36	7,259.86	773.16	381.67	173.19	208.48	1.831	Minor Risk		
19,100.00	11,820.00	18,925.50	11,620.00	115.05	114.97	58.36	7,309.86	772.84	381.67	171.97	209.69	1.820	Minor Risk		
19,150.00	11,820.00	18,975.50	11,620.00	115.73	115.65	58.36	7,359.86	772.53	381.67	170.76	210.91	1.810	Minor Risk		
19,200.00	11,820.00	19,025.50	11,620.00	116.40	116.33	58.36	7,409.86	772.22	381.67	169.54	212.13	1.799	Minor Risk		
19,250.00	11,820.00	19,075.50	11,620.00	117.09	117.01	58.36	7,459.86	771.90	381.67	168.32	213.35	1.789	Minor Risk		
19,300.00	11,820.00	19,125.50	11,620.00	117.77	117.69	58.36	7,509.86	771.59	381.67	167.10	214.57	1.779	Minor Risk		
19,350.00	11,820.00	19,175.50	11,620.00	118.45	118.38	58.36	7,559.86	771.27	381.67	165.87	215.79	1.769	Minor Risk		
19,400.00	11,820.00	19,225.50	11,620.00	119.13	119.06	58.36	7,609.86	770.96	381.67	164.65	217.02	1.759	Minor Risk		
19,450.00	11,820.00	19,275.50	11,620.00	119.81	119.74	58.36	7,659.85	770.65	381.67	163.43	218.24	1.749	Minor Risk		
19,500.00	11,820.00	19,325.50	11,620.00	120.49	120.42	58.36	7,709.85	770.33	381.67	162.20	219.46	1.739	Minor Risk		
19,550.00	11,820.00	19,375.50	11,620.00	121.18	121.11	58.36	7,759.85	770.02	381.67	160.97	220.69	1.729	Minor Risk		
19,600.00	11,820.00	19,425.50	11,620.00	121.86	121.79	58.36	7,809.85	769.71	381.67	159.75	221.92	1.720	Minor Risk		
19,650.00	11,820.00	19,475.50	11,620.00	122.55	122.48	58.36	7,859.85	769.39	381.67	158.52	223.15	1.710	Minor Risk		
19,700.00	11,820.00	19,525.50	11,620.00	123.23	123.16	58.36	7,909.85	769.08	381.66	157.29	224.37	1.701	Minor Risk		
19,750.00	11,820.00	19,575.50	11,620.00	123.92	123.85	58.36	7,959.85	768.76	381.66	156.06	225.60	1.692	Minor Risk		
19,800.00	11,820.00	19,625.50	11,620.00	124.60	124.53	58.36	8,009.85	768.45	381.66	154.83	226.83	1.683	Minor Risk		
19,850.00	11,820.00	19,675.50	11,620.00	125.29	125.22	58.36	8,059.85	768.14	381.66	153.60	228.07	1.673	Minor Risk		
19,900.00	11,820.00	19,725.50	11,620.00	125.98	125.91	58.36	8,109.85	767.82	381.66	152.37	229.30	1.664	Minor Risk		
19,950.00	11,820.00	19,775.50	11,620.00	126.67	126.59	58.36	8,159.84	767.51	381.66	151.13	230.53	1.656	Minor Risk		
20,000.00	11,820.00	19,825.50	11,620.00	127.35	127.28	58.36	8,209.84	767.19	381.66	149.90	231.76	1.647	Minor Risk		
20,050.00	11,820.00	19,875.50	11,620.00	128.04	127.97	58.36	8,259.84	766.88	381.66	148.66	233.00	1.638	Minor Risk		
20,100.00	11,820.00	19,925.50	11,620.00	128.73	128.66	58.36	8,309.84	766.57	381.66	147.43	234.23	1.629	Minor Risk		
20,150.00	11,820.00	19,975.50	11,620.00	129.42	129.35	58.36	8,359.84	766.25	381.66	146.19	235.47	1.621	Minor Risk		
20,200.00	11,820.00	20,025.50	11,620.00	130.11	130.04	58.36	8,409.84	765.94	381.66	144.96	236.71	1.612	Minor Risk		
20,250.00	11,820.00	20,075.50	11,620.00	130.80	130.73	58.36	8,459.84	765.63	381.66	143.72	237.95	1.604	Minor Risk		
20,300.00	11,820.00	20,125.50	11,620.00	131.49	131.42	58.36	8,509.84	765.31	381.66	142.48	239.18	1.596	Minor Risk		
20,350.00	11,820.00	20,175.50	11,620.00	132.18	132.11	58.36	8,559.84	765.00	381.66	141.24	240.42	1.587	Minor Risk		
20,400.00	11,820.00	20,225.50	11,620.00	132.87	132.80	58.36	8,609.84	764.68	381.66	140.00	241.66	1.579	Minor Risk		
20,450.00	11,820.00	20,275.50	11,620.00	133.57	133.49	58.36	8,659.84	764.37	381.66	138.76	242.90	1.571	Minor Risk		
20,500.00	11,820.00	20,325.50	11,620.00	134.26	134.19	58.36	8,709.83	764.06	381.66	137.52	244.15	1.563	Minor Risk		
20,550.00	11,820.00	20,375.50	11,620.00	134.95	134.88	58.36	8,759.83	763.74	381.66	136.27	245.39	1.555	Minor Risk		
20,600.00	11,820.00	20,425.50	11,620.00	135.64	135.57	58.36	8,809.83	763.43	381.66	135.03	246.63	1.548	Minor Risk		
20,650.00	11,820.00	20,475.50	11,620.00	136.34	136.27	58.36	8,859.83	763.11	381.66	133.79	247.87	1.540	Minor Risk		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design										Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan 1				Offset Site Error:		0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)						
20,700.00	11,820.00	20,525.50	11,620.00	137.03	136.96	58.36	8,909.83	762.80	381.66	132.54	249.12	1.532	Minor Risk			
20,750.00	11,820.00	20,575.50	11,620.00	137.73	137.65	58.36	8,959.83	762.49	381.66	131.30	250.36	1.524	Minor Risk			
20,800.00	11,820.00	20,625.50	11,620.00	138.42	138.35	58.36	9,009.83	762.17	381.66	130.05	251.61	1.517	Minor Risk			
20,850.00	11,820.00	20,675.50	11,620.00	139.11	139.04	58.36	9,059.83	761.86	381.66	128.81	252.85	1.509	Minor Risk			
20,900.00	11,820.00	20,725.50	11,620.00	139.81	139.74	58.36	9,109.83	761.55	381.66	127.56	254.10	1.502	Minor Risk			
20,950.00	11,820.00	20,775.50	11,620.00	140.51	140.43	58.36	9,159.83	761.23	381.66	126.31	255.35	1.495	Major Risk			
21,000.00	11,820.00	20,825.50	11,620.00	141.20	141.13	58.36	9,209.82	760.92	381.66	125.06	256.60	1.487	Major Risk			
21,050.00	11,820.00	20,875.50	11,620.00	141.90	141.83	58.36	9,259.82	760.60	381.66	123.82	257.84	1.480	Major Risk			
21,100.00	11,820.00	20,925.50	11,620.00	142.59	142.52	58.36	9,309.82	760.29	381.66	122.57	259.09	1.473	Major Risk			
21,150.00	11,820.00	20,975.50	11,620.00	143.29	143.22	58.36	9,359.82	759.98	381.66	121.32	260.34	1.466	Major Risk			
21,200.00	11,820.00	21,025.50	11,620.00	143.99	143.92	58.36	9,409.82	759.66	381.66	120.07	261.59	1.459	Major Risk			
21,250.00	11,820.00	21,075.50	11,620.00	144.69	144.61	58.36	9,459.82	759.35	381.66	118.82	262.84	1.452	Major Risk			
21,300.00	11,820.00	21,125.50	11,620.00	145.38	145.31	58.36	9,509.82	759.04	381.66	117.56	264.10	1.445	Major Risk			
21,350.00	11,820.00	21,175.50	11,620.00	146.08	146.01	58.36	9,559.82	758.72	381.66	116.31	265.35	1.438	Major Risk			
21,400.00	11,820.00	21,225.50	11,620.00	146.78	146.71	58.36	9,609.82	758.41	381.66	115.06	266.60	1.432	Major Risk			
21,450.00	11,820.00	21,275.50	11,620.00	147.48	147.41	58.36	9,659.82	758.09	381.66	113.81	267.85	1.425	Major Risk			
21,500.00	11,820.00	21,325.50	11,620.00	148.18	148.11	58.36	9,709.81	757.78	381.66	112.55	269.11	1.418	Major Risk			
21,550.00	11,820.00	21,375.50	11,620.00	148.88	148.81	58.36	9,759.81	757.47	381.66	111.30	270.36	1.412	Major Risk			
21,600.00	11,820.00	21,425.50	11,620.00	149.58	149.50	58.36	9,809.81	757.15	381.66	110.04	271.61	1.405	Major Risk			
21,650.00	11,820.00	21,475.50	11,620.00	150.28	150.20	58.36	9,859.81	756.84	381.66	108.79	272.87	1.399	Major Risk			
21,700.00	11,820.00	21,525.50	11,620.00	150.98	150.90	58.36	9,909.81	756.52	381.66	107.53	274.13	1.392	Major Risk			
21,750.00	11,820.00	21,575.50	11,620.00	151.68	151.61	58.36	9,959.81	756.21	381.66	106.28	275.38	1.386	Major Risk			
21,800.00	11,820.00	21,625.50	11,620.00	152.38	152.31	58.36	10,009.81	755.90	381.66	105.02	276.64	1.380	Major Risk			
21,850.00	11,820.00	21,675.50	11,620.00	153.08	153.01	58.36	10,059.81	755.58	381.66	103.76	277.89	1.373	Major Risk			
21,900.00	11,820.00	21,725.50	11,620.00	153.78	153.71	58.36	10,109.81	755.27	381.66	102.51	279.15	1.367	Major Risk			
21,950.00	11,820.00	21,775.50	11,620.00	154.48	154.41	58.36	10,159.81	754.96	381.66	101.25	280.41	1.361	Major Risk			
22,000.00	11,820.00	21,825.50	11,620.00	155.18	155.11	58.36	10,209.80	754.64	381.66	99.99	281.67	1.355	Major Risk			
22,050.00	11,820.00	21,875.50	11,620.00	155.88	155.81	58.36	10,259.80	754.33	381.66	98.73	282.93	1.349	Major Risk			
22,083.37	11,820.00	21,908.87	11,620.00	156.35	156.28	58.36	10,293.17	754.12	381.66	97.89	283.77	1.345	Major Risk, SF			

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.00	0.00	7.60	-7.60	0.50	0.50	-5.99	299.79	-31.43	301.43						
50.00	50.00	42.40	42.40	0.50	0.50	-5.99	299.79	-31.43	301.43	300.43	1.01	299.862			
100.00	100.00	107.60	92.40	0.52	0.53	-5.99	299.79	-31.43	301.43	300.39	1.04	288.939			
150.00	150.00	142.40	142.40	0.59	0.58	-5.99	299.79	-31.43	301.43	300.27	1.17	258.416			
200.00	200.00	207.60	192.40	0.70	0.72	-5.99	299.79	-31.43	301.43	300.01	1.42	211.741			
250.00	250.00	242.40	242.40	0.84	0.82	-5.99	299.79	-31.43	301.43	299.78	1.65	182.275			
300.00	300.00	307.60	292.40	0.99	1.01	-5.99	299.79	-31.43	301.43	299.44	2.00	150.848			
350.00	350.00	342.40	342.40	1.15	1.12	-5.99	299.79	-31.43	301.43	299.17	2.27	132.993			
400.00	400.00	407.60	392.40	1.31	1.33	-5.99	299.79	-31.43	301.43	298.79	2.64	114.033			
450.00	450.00	442.40	442.40	1.48	1.45	-5.99	299.79	-31.43	301.43	298.51	2.93	102.982			
500.00	500.00	507.60	492.40	1.65	1.67	-5.99	299.79	-31.43	301.43	298.12	3.32	90.844			
550.00	550.00	542.40	542.40	1.82	1.79	-5.99	299.79	-31.43	301.43	297.82	3.61	83.519			
600.00	600.00	607.60	592.40	1.99	2.02	-5.99	299.79	-31.43	301.43	297.43	4.01	75.216			
650.00	650.00	642.40	642.40	2.16	2.14	-5.99	299.79	-31.43	301.43	297.13	4.30	70.058			
700.00	700.00	707.60	692.40	2.34	2.37	-5.99	299.79	-31.43	301.43	296.73	4.71	64.063			
750.00	750.00	742.40	742.40	2.51	2.49	-5.99	299.79	-31.43	301.43	296.43	5.00	60.254			
800.00	800.00	807.60	792.40	2.69	2.72	-5.99	299.79	-31.43	301.43	296.03	5.41	55.739			
850.00	850.00	842.40	842.40	2.87	2.84	-5.99	299.79	-31.43	301.43	295.73	5.71	52.818			
900.00	900.00	907.60	892.40	3.04	3.07	-5.99	299.79	-31.43	301.43	295.32	6.11	49.302			
950.00	950.00	942.40	942.40	3.22	3.19	-5.99	299.79	-31.43	301.43	295.02	6.41	46.996			
1,000.00	1,000.00	1,007.60	992.40	3.40	3.42	-5.99	299.79	-31.43	301.43	294.61	6.82	44.184			
1,050.00	1,050.00	1,042.40	1,042.40	3.58	3.55	-5.99	299.79	-31.43	301.43	294.31	7.12	42.318			
1,100.00	1,100.00	1,107.60	1,092.40	3.75	3.78	-5.99	299.79	-31.43	301.43	293.90	7.53	40.019			
1,150.00	1,150.00	1,142.40	1,142.40	3.93	3.90	-5.99	299.79	-31.43	301.43	293.60	7.83	38.480			
1,200.00	1,200.00	1,207.60	1,192.40	4.11	4.14	-5.99	299.79	-31.43	301.43	293.19	8.24	36.567			
1,250.00	1,250.00	1,242.40	1,242.40	4.29	4.26	-5.99	299.79	-31.43	301.43	292.89	8.55	35.275			
1,300.00	1,300.00	1,307.60	1,292.40	4.46	4.49	-5.99	299.79	-31.43	301.43	292.48	8.96	33.659			
1,350.00	1,350.00	1,342.40	1,342.40	4.64	4.62	-5.99	299.79	-31.43	301.43	292.18	9.26	32.561			
1,400.00	1,400.00	1,407.60	1,392.40	4.82	4.85	-5.99	299.79	-31.43	301.43	291.77	9.67	31.178			
1,450.00	1,450.00	1,442.40	1,442.40	5.00	4.97	-5.99	299.79	-31.43	301.43	291.46	9.97	30.232			
1,500.00	1,500.00	1,507.60	1,492.40	5.18	5.20	-5.99	299.79	-31.43	301.43	291.05	10.38	29.035			
1,550.00	1,550.00	1,542.40	1,542.40	5.36	5.33	-5.99	299.79	-31.43	301.43	290.75	10.68	28.213			
1,600.00	1,600.00	1,607.60	1,592.40	5.53	5.56	-5.99	299.79	-31.43	301.43	290.34	11.10	27.167			
1,650.00	1,650.00	1,642.40	1,642.40	5.71	5.69	-5.99	299.79	-31.43	301.43	290.04	11.40	26.446			
1,700.00	1,700.00	1,707.60	1,692.40	5.89	5.92	-5.99	299.79	-31.43	301.43	289.62	11.81	25.524			
1,750.00	1,750.00	1,742.40	1,742.40	6.07	6.04	-5.99	299.79	-31.43	301.43	289.32	12.11	24.886			
1,800.00	1,800.00	1,807.60	1,792.40	6.25	6.28	-5.99	299.79	-31.43	301.43	288.91	12.52	24.068			
1,850.00	1,850.00	1,842.40	1,842.40	6.43	6.40	-5.99	299.79	-31.43	301.43	288.61	12.83	23.500			
1,900.00	1,900.00	1,907.60	1,892.40	6.61	6.63	-5.99	299.79	-31.43	301.43	288.19	13.24	22.769			
1,950.00	1,950.00	1,942.40	1,942.40	6.78	6.76	-5.99	299.79	-31.43	301.43	287.89	13.54	22.259			
2,000.00	2,000.00	2,007.60	1,992.40	6.96	6.99	-5.99	299.79	-31.43	301.43	287.48	13.95	21.602			
2,050.00	2,050.00	2,042.40	2,042.40	7.14	7.11	-5.99	299.79	-31.43	301.43	287.18	14.26	21.143			
2,100.00	2,100.00	2,107.60	2,092.40	7.32	7.35	-5.99	299.79	-31.43	301.43	286.76	14.67	20.549			
2,150.00	2,150.00	2,142.40	2,142.40	7.50	7.47	-5.99	299.79	-31.43	301.43	286.46	14.97	20.133			
2,200.00	2,200.00	2,207.60	2,192.40	7.68	7.71	-5.99	299.79	-31.43	301.43	286.05	15.38	19.593			
2,250.00	2,250.00	2,242.40	2,242.40	7.86	7.83	-5.99	299.79	-31.43	301.43	285.75	15.69	19.215			
2,300.00	2,300.00	2,307.60	2,292.40	8.04	8.06	-5.99	299.79	-31.43	301.43	285.33	16.10	18.723			
2,350.00	2,350.00	2,342.40	2,342.40	8.22	8.19	-5.99	299.79	-31.43	301.43	285.03	16.40	18.376			
2,400.00	2,400.00	2,407.60	2,392.40	8.39	8.42	-5.99	299.79	-31.43	301.43	284.62	16.82	17.926			
2,450.00	2,450.00	2,442.40	2,442.40	8.57	8.55	-5.99	299.79	-31.43	301.43	284.31	17.12	17.608			
2,500.00	2,500.00	2,507.60	2,492.40	8.75	8.78	-5.99	299.79	-31.43	301.43	283.90	17.53	17.194			
2,550.00	2,550.00	2,542.40	2,542.40	8.93	8.90	-5.99	299.79	-31.43	301.43	283.60	17.83	16.901			

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,600.00	2,600.00	2,607.60	2,592.40	9.11	9.14	-5.99	299.79	-31.43	301.43	283.19	18.25	16.520		
2,650.00	2,650.00	2,642.40	2,642.40	9.29	9.26	-5.99	299.79	-31.43	301.43	282.88	18.55	16.249		
2,700.00	2,700.00	2,707.60	2,692.40	9.47	9.50	-5.99	299.79	-31.43	301.43	282.47	18.96	15.896		
2,750.00	2,750.00	2,742.40	2,742.40	9.65	9.62	-5.99	299.79	-31.43	301.43	282.17	19.27	15.645		
2,800.00	2,800.00	2,807.60	2,792.40	9.82	9.85	-118.02	299.79	-31.43	301.54	281.86	19.67	15.328		
2,850.00	2,849.99	2,842.39	2,842.39	9.99	9.98	-118.13	299.79	-31.43	301.84	281.88	19.96	15.119		
2,900.00	2,899.98	2,907.62	2,892.38	10.15	10.21	-118.31	299.79	-31.43	302.36	281.99	20.37	14.847		
2,950.00	2,949.96	2,942.36	2,942.36	10.32	10.34	-118.55	299.79	-31.43	303.09	282.43	20.66	14.672		
3,000.00	2,999.92	2,992.32	2,992.32	10.49	10.51	-118.87	299.79	-31.43	304.03	283.03	21.00	14.474		
3,050.00	3,049.86	3,044.56	3,044.56	10.66	10.69	-119.27	299.63	-31.37	305.04	283.69	21.35	14.286		
3,100.00	3,099.78	3,097.22	3,097.22	10.83	10.87	-119.72	299.02	-31.12	305.84	284.14	21.70	14.094		
3,150.00	3,149.68	3,149.88	3,149.87	11.00	11.04	-120.22	297.97	-30.70	306.42	284.38	22.04	13.905		
3,200.00	3,199.56	3,202.56	3,202.52	11.17	11.22	-120.73	296.47	-30.10	306.65	284.28	22.37	13.706		
3,250.00	3,249.44	3,255.24	3,255.16	11.34	11.39	-121.21	294.51	-29.32	306.46	283.75	22.71	13.495		
3,300.00	3,299.33	3,307.93	3,307.78	11.51	11.56	-121.68	292.11	-28.36	305.83	282.79	23.04	13.271		
3,350.00	3,349.21	3,360.61	3,360.38	11.68	11.73	-122.14	289.26	-27.22	304.78	281.40	23.38	13.036		
3,400.00	3,399.10	3,413.28	3,412.92	11.86	11.91	-122.57	285.96	-25.90	303.29	279.58	23.71	12.790		
3,450.00	3,448.98	3,465.93	3,465.41	12.03	12.08	-123.00	282.21	-24.40	301.37	277.32	24.04	12.534		
3,500.00	3,498.86	3,518.54	3,517.83	12.20	12.25	-123.41	278.02	-22.72	299.01	274.63	24.38	12.267		
3,550.00	3,548.75	3,571.10	3,570.16	12.38	12.43	-123.82	273.39	-20.87	296.22	271.51	24.71	11.990		
3,600.00	3,598.63	3,623.62	3,622.39	12.55	12.60	-124.21	268.31	-18.84	292.98	267.95	25.03	11.703		
3,650.00	3,648.52	3,674.83	3,673.28	12.72	12.78	-124.59	262.98	-16.71	289.37	264.00	25.37	11.407		
3,700.00	3,698.40	3,724.66	3,722.79	12.90	12.94	-124.97	257.73	-14.61	285.70	259.99	25.71	11.114		
3,750.00	3,748.28	3,774.49	3,772.30	13.07	13.11	-125.36	252.49	-12.51	282.05	256.00	26.05	10.829		
3,800.00	3,798.17	3,824.32	3,821.80	13.25	13.28	-125.75	247.24	-10.41	278.41	252.02	26.39	10.551		
3,850.00	3,848.05	3,874.15	3,871.31	13.42	13.45	-126.16	242.00	-8.31	274.78	248.05	26.73	10.280		
3,900.00	3,897.93	3,923.98	3,920.82	13.60	13.63	-126.58	236.75	-6.21	271.17	244.10	27.07	10.017		
3,950.00	3,947.82	3,973.81	3,970.33	13.77	13.80	-127.01	231.51	-4.12	267.57	240.15	27.41	9.761		
4,000.00	3,997.70	4,023.64	4,019.84	13.95	13.97	-127.45	226.26	-2.02	263.98	236.23	27.76	9.511		
4,050.00	4,047.59	4,073.47	4,069.34	14.13	14.14	-127.91	221.01	0.08	260.42	232.32	28.10	9.268		
4,100.00	4,097.47	4,123.30	4,118.85	14.30	14.32	-128.37	215.77	2.18	256.87	228.43	28.44	9.031		
4,150.00	4,147.35	4,173.13	4,168.36	14.48	14.49	-128.85	210.52	4.28	253.34	224.55	28.79	8.800		
4,200.00	4,197.24	4,222.96	4,217.87	14.66	14.67	-129.35	205.28	6.38	249.82	220.69	29.13	8.576		
4,250.00	4,247.12	4,272.79	4,267.38	14.83	14.84	-129.85	200.03	8.47	246.33	216.85	29.48	8.356		
4,300.00	4,297.01	4,322.62	4,316.88	15.01	15.02	-130.38	194.79	10.57	242.85	213.03	29.82	8.143		
4,350.00	4,346.89	4,372.45	4,366.39	15.19	15.19	-130.91	189.54	12.67	239.40	209.23	30.17	7.935		
4,400.00	4,396.77	4,422.27	4,415.90	15.37	15.37	-131.47	184.29	14.77	235.96	205.45	30.52	7.733		
4,450.00	4,446.66	4,472.10	4,465.41	15.55	15.55	-132.03	179.05	16.87	232.55	201.69	30.86	7.535		
4,500.00	4,496.54	4,521.93	4,514.92	15.72	15.72	-132.62	173.80	18.97	229.17	197.96	31.21	7.343		
4,550.00	4,546.43	4,571.76	4,564.43	15.90	15.90	-133.22	168.56	21.06	225.80	194.25	31.56	7.155		
4,600.00	4,596.31	4,621.59	4,613.93	16.08	16.08	-133.84	163.31	23.16	222.47	190.56	31.91	6.973		
4,650.00	4,646.19	4,671.42	4,663.44	16.26	16.26	-134.48	158.07	25.26	219.16	186.90	32.25	6.795		
4,700.00	4,696.08	4,721.25	4,712.95	16.44	16.44	-135.14	152.82	27.36	215.88	183.27	32.60	6.622		
4,750.00	4,745.96	4,771.08	4,762.46	16.62	16.62	-135.82	147.57	29.46	212.62	179.67	32.95	6.453		
4,800.00	4,795.85	4,820.91	4,811.97	16.80	16.80	-136.52	142.33	31.55	209.40	176.10	33.30	6.288		
4,850.00	4,845.73	4,870.74	4,861.47	16.98	16.98	-137.25	137.08	33.65	206.21	172.56	33.65	6.128		
4,900.00	4,895.61	4,920.57	4,910.98	17.15	17.16	-137.99	131.84	35.75	203.06	169.06	34.00	5.972		
4,950.00	4,945.50	4,970.40	4,960.49	17.33	17.34	-138.76	126.59	37.85	199.94	165.59	34.35	5.821		
5,000.00	4,995.38	5,020.23	5,010.00	17.51	17.52	-139.55	121.34	39.95	196.85	162.15	34.70	5.673		
5,050.00	5,045.27	5,070.06	5,059.51	17.69	17.71	-140.37	116.10	42.05	193.81	158.76	35.05	5.529		
5,100.00	5,095.15	5,119.89	5,109.01	17.87	17.89	-141.21	110.85	44.14	190.81	155.40	35.40	5.390		
5,150.00	5,145.03	5,169.72	5,158.52	18.05	18.07	-142.08	105.61	46.24	187.84	152.09	35.75	5.254		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan 2														
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,200.00	5,194.92	5,219.55	5,208.03	18.23	18.25	-142.98	100.36	48.34	184.93	148.82	36.11	5.122		
5,250.00	5,244.80	5,269.38	5,257.54	18.41	18.44	-143.90	95.12	50.44	182.06	145.60	36.46	4.994	Alert	
5,300.00	5,294.68	5,319.21	5,307.05	18.59	18.62	-144.86	89.87	52.54	179.24	142.43	36.81	4.869	Alert	
5,350.00	5,344.57	5,369.03	5,356.56	18.77	18.80	-145.84	84.62	54.64	176.47	139.30	37.16	4.748	Alert	
5,400.00	5,394.45	5,418.86	5,406.06	18.95	18.99	-146.86	79.38	56.73	173.75	136.24	37.52	4.631	Alert	
5,450.00	5,444.34	5,468.69	5,455.57	19.14	19.17	-147.91	74.13	58.83	171.09	133.22	37.87	4.518	Alert	
5,500.00	5,494.22	5,518.52	5,505.08	19.32	19.35	-148.99	68.89	60.93	168.50	130.27	38.23	4.408	Alert	
5,550.00	5,544.10	5,568.35	5,554.59	19.50	19.54	-150.10	63.64	63.03	165.96	127.37	38.58	4.301	Alert	
5,600.00	5,593.99	5,618.18	5,604.10	19.68	19.72	-151.25	58.40	65.13	163.48	124.54	38.94	4.198	Alert	
5,650.00	5,643.87	5,668.01	5,653.60	19.86	19.91	-152.43	53.15	67.23	161.08	121.78	39.30	4.099	Alert	
5,700.00	5,693.76	5,717.84	5,703.11	20.04	20.09	-153.65	47.90	69.32	158.74	119.09	39.65	4.003	Alert	
5,750.00	5,743.64	5,767.67	5,752.62	20.22	20.28	-154.90	42.66	71.42	156.48	116.47	40.01	3.911	Alert	
5,800.00	5,793.52	5,817.50	5,802.13	20.40	20.46	-156.19	37.41	73.52	154.30	113.93	40.37	3.822	Alert	
5,850.00	5,843.41	5,867.33	5,851.64	20.58	20.65	-157.52	32.17	75.62	152.20	111.47	40.73	3.737	Alert	
5,900.00	5,893.29	5,917.16	5,901.15	20.76	20.84	-158.88	26.92	77.72	150.18	109.08	41.09	3.655	Alert	
5,950.00	5,943.18	5,966.99	5,950.65	20.95	21.02	-160.28	21.68	79.82	148.25	106.79	41.46	3.576	Alert	
6,000.00	5,993.06	6,016.82	6,000.16	21.13	21.21	-161.71	16.43	81.91	146.41	104.59	41.82	3.501	Alert	
6,050.00	6,042.94	6,066.65	6,049.67	21.31	21.40	-163.18	11.18	84.01	144.66	102.48	42.18	3.429	Alert	
6,100.00	6,092.83	6,116.48	6,099.18	21.49	21.58	-164.68	5.94	86.11	143.01	100.46	42.55	3.361	Alert	
6,150.00	6,142.71	6,166.31	6,148.69	21.67	21.77	-166.22	0.69	88.21	141.46	98.55	42.92	3.296	Alert	
6,200.00	6,192.60	6,216.14	6,198.19	21.85	21.96	-167.79	-4.55	90.31	140.02	96.73	43.29	3.235	Alert	
6,250.00	6,242.48	6,265.96	6,247.70	22.04	22.14	-169.39	-9.80	92.41	138.68	95.03	43.66	3.177	Alert	
6,300.00	6,292.36	6,315.79	6,297.21	22.22	22.33	-171.02	-15.04	94.50	137.46	93.43	44.03	3.122	Alert	
6,350.00	6,342.25	6,365.62	6,346.72	22.40	22.52	-172.68	-20.29	96.60	136.35	91.95	44.40	3.071	Alert	
6,400.00	6,392.13	6,415.45	6,396.23	22.58	22.70	-174.36	-25.54	98.70	135.36	90.58	44.77	3.023	Alert	
6,450.00	6,442.02	6,465.28	6,445.73	22.76	22.89	-176.07	-30.78	100.80	134.48	89.33	45.15	2.979	Alert	
6,500.00	6,491.90	6,515.11	6,495.24	22.95	23.08	-177.80	-36.03	102.90	133.73	88.20	45.53	2.937	Alert	
6,550.00	6,541.78	6,564.94	6,544.75	23.13	23.27	-179.54	-41.27	105.00	133.10	87.19	45.91	2.899	Alert	
6,600.00	6,591.67	6,614.77	6,594.26	23.31	23.46	-178.70	-46.52	107.09	132.60	86.31	46.29	2.865	Alert	
6,650.00	6,641.55	6,664.60	6,643.77	23.49	23.64	-176.93	-51.76	109.19	132.22	85.55	46.67	2.833	Alert	
6,700.00	6,691.43	6,714.43	6,693.28	23.68	23.83	-175.15	-57.01	111.29	131.97	84.92	47.05	2.805	Alert	
6,750.00	6,741.32	6,764.26	6,742.78	23.86	24.02	-173.36	-62.26	113.39	131.85	84.42	47.43	2.780	Alert	
6,771.47	6,762.74	6,785.65	6,764.04	23.94	24.10	-172.59	-64.51	114.29	131.84	84.24	47.60	2.770	Alert, CC	
6,800.00	6,791.20	6,814.09	6,792.29	24.04	24.21	-171.57	-67.50	115.49	131.86	84.04	47.82	2.758	Alert	
6,850.00	6,841.09	6,863.92	6,841.80	24.22	24.40	-169.79	-72.75	117.59	132.00	83.80	48.20	2.738	Alert	
6,900.00	6,890.97	6,913.75	6,891.31	24.41	24.59	-168.01	-77.99	119.68	132.27	83.68	48.59	2.722	Alert, ES	
6,950.00	6,940.85	6,963.58	6,940.82	24.59	24.78	-166.24	-83.24	121.78	132.66	83.69	48.97	2.709	Alert	
7,000.00	6,990.74	7,013.41	6,990.32	24.77	24.97	-164.48	-88.48	123.88	133.18	83.82	49.36	2.698	Alert	
7,050.00	7,040.62	7,063.24	7,039.83	24.95	25.16	-162.74	-93.73	125.98	133.83	84.08	49.75	2.690	Alert	
7,100.00	7,090.51	7,113.07	7,089.34	25.14	25.34	-161.01	-98.98	128.08	134.60	84.46	50.13	2.685	Alert	
7,150.00	7,140.39	7,162.90	7,138.85	25.32	25.53	-159.31	-104.22	130.18	135.49	84.97	50.52	2.682	Alert	
7,200.00	7,190.27	7,212.72	7,188.36	25.50	25.72	-157.63	-109.47	132.27	136.50	85.59	50.91	2.681	Alert, SF	
7,250.00	7,240.16	7,262.55	7,237.86	25.68	25.91	-155.97	-114.71	134.37	137.63	86.33	51.30	2.683	Alert	
7,300.00	7,290.04	7,312.38	7,287.37	25.87	26.10	-154.35	-119.96	136.47	138.87	87.18	51.68	2.687	Alert	
7,350.00	7,339.93	7,362.21	7,336.88	26.05	26.29	-152.75	-125.21	138.57	140.22	88.15	52.07	2.693	Alert	
7,400.00	7,389.81	7,412.04	7,386.39	26.23	26.48	-151.18	-130.45	140.67	141.68	89.22	52.45	2.701	Alert	
7,450.00	7,439.69	7,461.87	7,435.90	26.42	26.67	-149.65	-135.70	142.76	143.24	90.40	52.84	2.711	Alert	
7,500.00	7,489.58	7,511.70	7,485.41	26.60	26.86	-148.15	-140.94	144.86	144.90	91.68	53.22	2.722	Alert	
7,550.00	7,539.46	7,561.53	7,534.91	26.78	27.05	-146.69	-146.19	146.96	146.66	93.05	53.61	2.736	Alert	
7,600.00	7,589.35	7,611.36	7,584.42	26.96	27.24	-145.26	-151.43	149.06	148.51	94.52	53.99	2.751	Alert	
7,650.00	7,639.23	7,661.19	7,633.93	27.15	27.43	-143.87	-156.68	151.16	150.46	96.08	54.37	2.767	Alert	
7,700.00	7,689.11	7,711.02	7,683.44	27.33	27.62	-142.51	-161.93	153.26	152.49	97.73	54.76	2.785	Alert	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan 2														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)							
7,750.00	7,739.00	7,760.85	7,732.95	27.51	27.81	141.19	-167.17	155.35	154.60	99.47	55.14	2.804	Alert		
7,800.00	7,788.88	7,810.68	7,782.45	27.70	28.00	139.91	-172.42	157.45	156.80	101.28	55.52	2.824	Alert		
7,850.00	7,838.76	7,860.51	7,831.96	27.88	28.20	138.66	-177.66	159.55	159.07	103.17	55.90	2.846	Alert		
7,900.00	7,888.65	7,910.28	7,881.46	28.06	28.38	137.58	-182.57	161.51	161.42	105.15	56.27	2.869	Alert		
7,950.00	7,938.53	7,960.13	7,931.09	28.25	28.57	136.75	-186.88	163.24	163.84	107.19	56.65	2.892	Alert		
8,000.00	7,988.42	8,010.03	7,980.83	28.43	28.76	136.18	-190.59	164.72	166.29	109.27	57.02	2.916	Alert		
8,050.00	8,038.30	8,059.97	8,030.65	28.61	28.94	135.84	-193.70	165.97	168.75	111.36	57.38	2.941	Alert		
8,100.00	8,088.18	8,109.92	8,080.53	28.80	29.12	135.73	-196.20	166.97	171.21	113.46	57.75	2.965	Alert		
8,150.00	8,138.07	8,159.87	8,130.44	28.98	29.30	135.84	-198.11	167.73	173.66	115.56	58.11	2.989	Alert		
8,200.00	8,187.95	8,209.81	8,180.35	29.16	29.48	136.15	-199.40	168.25	176.12	117.65	58.46	3.012	Alert		
8,250.00	8,237.84	8,259.71	8,230.25	29.35	29.65	136.67	-200.09	168.52	178.58	119.77	58.81	3.037	Alert		
8,300.00	8,287.72	8,309.58	8,280.12	29.53	29.81	137.37	-200.21	168.57	181.07	121.92	59.15	3.061	Alert		
8,350.00	8,337.60	8,359.46	8,330.00	29.71	29.98	138.09	-200.21	168.57	183.60	124.10	59.50	3.086	Alert		
8,400.00	8,387.49	8,409.35	8,379.89	29.90	30.14	138.79	-200.21	168.57	186.15	126.31	59.84	3.111	Alert		
8,450.00	8,437.37	8,459.23	8,429.77	30.08	30.31	139.47	-200.21	168.57	188.72	128.55	60.18	3.136	Alert		
8,500.00	8,487.26	8,509.12	8,479.66	30.27	30.47	140.13	-200.21	168.57	191.33	130.81	60.52	3.162	Alert		
8,550.00	8,537.14	8,559.00	8,529.54	30.45	30.64	140.77	-200.21	168.57	193.96	133.10	60.86	3.187	Alert		
8,600.00	8,587.02	8,610.71	8,581.25	30.63	30.81	141.51	-199.89	168.57	196.53	135.32	61.21	3.211	Alert		
8,650.00	8,636.91	8,665.29	8,635.62	30.82	30.98	143.41	-195.46	168.54	198.16	136.62	61.54	3.220	Alert		
8,700.00	8,686.79	8,718.29	8,687.80	31.00	31.14	146.59	-186.24	168.49	199.01	137.17	61.84	3.218	Alert		
8,750.00	8,736.68	8,768.93	8,736.65	31.18	31.28	150.86	-172.96	168.40	199.81	137.70	62.11	3.217	Alert		
8,800.00	8,786.56	8,816.64	8,781.43	31.37	31.40	155.93	-156.54	168.31	201.51	139.17	62.34	3.232	Alert		
8,850.00	8,836.44	8,861.06	8,821.76	31.55	31.50	161.46	-137.96	168.19	205.16	142.71	62.45	3.285	Alert		
8,900.00	8,886.33	8,902.04	8,857.60	31.73	31.59	167.12	-118.09	168.07	211.71	149.40	62.31	3.398	Alert		
8,950.00	8,936.21	8,939.61	8,889.12	31.92	31.67	172.62	-97.68	167.95	221.92	160.10	61.82	3.590	Alert		
9,000.00	8,986.10	8,973.87	8,916.66	32.10	31.73	177.74	-77.29	167.82	236.18	175.25	60.94	3.876	Alert		
9,050.00	9,035.98	9,005.04	8,940.60	32.29	31.79	-177.62	-57.34	167.70	254.57	194.86	59.71	4.263	Alert		
9,100.00	9,085.86	9,033.36	8,961.39	32.47	31.84	-173.50	-38.11	167.59	276.86	218.61	58.25	4.753	Alert		
9,150.00	9,135.75	9,059.08	8,979.42	32.65	31.88	-169.89	-19.78	167.48	302.68	246.00	56.68	5.340			
9,200.00	9,185.63	9,082.44	8,995.08	32.84	31.92	-166.75	-2.44	167.37	331.58	276.50	55.09	6.019			
9,250.00	9,235.51	9,100.00	9,006.37	33.02	31.95	-164.49	11.01	167.29	363.16	309.83	53.33	6.810			
9,300.00	9,285.40	9,123.08	9,020.57	33.21	31.98	-161.66	29.19	167.18	396.93	344.82	52.11	7.617			
9,350.00	9,335.28	9,140.76	9,030.96	33.39	32.01	-159.59	43.51	167.09	432.63	381.85	50.78	8.519			
9,400.00	9,385.17	9,150.00	9,036.20	33.57	32.02	-158.55	51.11	167.05	470.04	420.82	49.22	9.551			
9,450.00	9,435.05	9,171.79	9,048.09	33.76	32.06	-156.20	69.37	166.93	508.64	460.14	48.50	10.487			
9,500.00	9,484.93	9,185.43	9,055.17	33.94	32.08	-154.80	81.02	166.86	548.51	500.97	47.53	11.539			
9,550.00	9,534.82	9,200.00	9,062.43	34.13	32.10	-153.37	93.66	166.79	589.38	542.62	46.76	12.604			
9,600.00	9,584.70	9,200.00	9,062.43	34.31	32.10	-153.37	93.66	166.79	631.26	585.75	45.52	13.869			
9,650.00	9,634.59	9,220.34	9,072.02	34.49	32.13	-151.48	111.59	166.68	673.61	628.38	45.23	14.892			
9,700.00	9,684.47	9,230.30	9,076.48	34.68	32.14	-150.59	120.49	166.62	716.76	672.13	44.63	16.059			
9,750.00	9,734.35	9,250.00	9,084.85	34.86	32.17	-148.92	138.33	166.52	760.65	716.18	44.46	17.108			
9,800.00	9,784.24	9,250.00	9,084.85	35.05	32.17	-148.92	138.33	166.52	804.72	761.03	43.70	18.416			
9,850.00	9,834.12	9,250.00	9,084.85	35.23	32.17	-148.92	138.33	166.52	849.46	806.42	43.04	19.735			
9,900.00	9,884.01	9,263.76	9,090.33	35.41	32.19	-147.81	150.95	166.44	894.49	851.62	42.87	20.866			
9,950.00	9,933.89	9,270.81	9,093.02	35.60	32.20	-147.27	157.47	166.40	939.93	897.37	42.55	22.088			
10,000.00	9,983.77	9,277.43	9,095.47	35.78	32.21	-146.76	163.61	166.36	985.69	943.41	42.28	23.313			
10,050.00	10,033.66	9,283.65	9,097.71	35.97	32.22	-146.30	169.42	166.33	1,031.74	989.69	42.04	24.541			
10,100.00	10,083.54	9,300.00	9,103.29	36.15	32.25	-145.12	184.79	166.23	1,078.19	1,036.12	42.07	25.627			
10,150.00	10,133.43	9,300.00	9,103.29	36.34	32.25	-145.12	184.79	166.23	1,124.62	1,082.85	41.77	26.926			
10,200.00	10,183.31	9,300.00	9,103.29	36.52	32.25	-145.12	184.79	166.23	1,171.34	1,129.84	41.51	28.220			
10,250.00	10,233.19	9,300.00	9,103.29	36.70	32.25	-145.12	184.79	166.23	1,218.33	1,177.04	41.29	29.507			
10,300.00	10,283.08	9,300.00	9,103.29	36.89	32.25	-145.12	184.79	166.23	1,265.55	1,224.44	41.11	30.787			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan 2		Offset Site Error:		0.00 ft	
Survey Program: 0-MWD+HDGM															Offset Well Error:		0.50 ft	
Reference		Offset		Semi Major Axis		Distance												
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)							
10,350.00	10,332.96	9,300.00	9,103.29	37.07	32.25	-145.12	184.79	166.23	1,312.97	1,272.01	40.96	32.057						
10,400.00	10,382.85	9,318.50	9,109.08	37.26	32.27	-143.87	202.35	166.13	1,360.16	1,319.02	41.14	33.066						
10,450.00	10,432.73	9,322.50	9,110.25	37.44	32.28	-143.61	206.18	166.10	1,407.74	1,366.65	41.09	34.262						
10,500.00	10,482.61	9,326.31	9,111.35	37.62	32.29	-143.36	209.83	166.08	1,455.44	1,414.39	41.05	35.452						

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis		Highside Toolface	Offset Wellbore Centre		Distance		Minimum Separation	Separation Factor	Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset		+N/-S	+E/-W	Between Centres	Between Ellipses						
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)					
0.00	0.00	0.10	0.10	0.50	0.50	-90.34	-0.18	-29.97	29.97							
50.00	50.00	50.10	50.10	0.50	0.50	-90.34	-0.18	-29.97	29.97	28.96	1.01	29.776				
100.00	100.00	100.10	100.10	0.52	0.52	-90.34	-0.18	-29.97	29.97	28.93	1.04	28.940				
150.00	150.00	150.10	150.10	0.59	0.59	-90.34	-0.18	-29.97	29.97	28.79	1.18	25.384				
200.00	200.00	200.10	200.10	0.70	0.70	-90.34	-0.18	-29.97	29.97	28.57	1.40	21.340				
250.00	250.00	250.10	250.10	0.84	0.84	-90.34	-0.18	-29.97	29.97	28.29	1.68	17.885				
300.00	300.00	300.10	300.10	0.99	0.99	-90.34	-0.18	-29.97	29.97	28.00	1.97	15.175				
350.00	350.00	350.10	350.10	1.15	1.15	-90.34	-0.18	-29.97	29.97	27.68	2.29	13.080				
400.00	400.00	400.10	400.10	1.31	1.31	-90.34	-0.18	-29.97	29.97	27.35	2.62	11.446				
450.00	450.00	450.10	450.10	1.48	1.48	-90.34	-0.18	-29.97	29.97	27.02	2.95	10.149				
500.00	500.00	500.10	500.10	1.65	1.65	-90.34	-0.18	-29.97	29.97	26.68	3.29	9.103				
550.00	550.00	550.10	550.10	1.82	1.82	-90.34	-0.18	-29.97	29.97	26.33	3.64	8.243				
600.00	600.00	600.10	600.10	1.99	1.99	-90.34	-0.18	-29.97	29.97	25.99	3.98	7.527				
650.00	650.00	650.10	650.10	2.16	2.16	-90.34	-0.18	-29.97	29.97	25.64	4.33	6.922				
700.00	700.00	700.10	700.10	2.34	2.34	-90.34	-0.18	-29.97	29.97	25.29	4.68	6.405				
750.00	750.00	750.10	750.10	2.51	2.52	-90.34	-0.18	-29.97	29.97	24.94	5.03	5.959				
800.00	800.00	800.10	800.10	2.69	2.69	-90.34	-0.18	-29.97	29.97	24.59	5.38	5.569				
850.00	850.00	850.10	850.10	2.87	2.87	-90.34	-0.18	-29.97	29.97	24.24	5.73	5.227				
900.00	900.00	900.10	900.10	3.04	3.04	-90.34	-0.18	-29.97	29.97	23.88	6.09	4.923	Alert			
950.00	950.00	950.10	950.10	3.22	3.22	-90.34	-0.18	-29.97	29.97	23.53	6.44	4.653	Alert			
1,000.00	1,000.00	1,000.10	1,000.10	3.40	3.40	-90.34	-0.18	-29.97	29.97	23.17	6.80	4.410	Alert			
1,050.00	1,050.00	1,050.10	1,050.10	3.58	3.58	-90.34	-0.18	-29.97	29.97	22.82	7.15	4.191	Alert			
1,100.00	1,100.00	1,100.10	1,100.10	3.75	3.75	-90.34	-0.18	-29.97	29.97	22.47	7.51	3.993	Alert			
1,150.00	1,150.00	1,150.10	1,150.10	3.93	3.93	-90.34	-0.18	-29.97	29.97	22.11	7.86	3.813	Alert			
1,200.00	1,200.00	1,200.10	1,200.10	4.11	4.11	-90.34	-0.18	-29.97	29.97	21.75	8.22	3.648	Alert			
1,250.00	1,250.00	1,250.10	1,250.10	4.29	4.29	-90.34	-0.18	-29.97	29.97	21.40	8.57	3.496	Alert			
1,300.00	1,300.00	1,300.10	1,300.10	4.46	4.46	-90.34	-0.18	-29.97	29.97	21.04	8.93	3.357	Alert			
1,350.00	1,350.00	1,350.10	1,350.10	4.64	4.64	-90.34	-0.18	-29.97	29.97	20.69	9.29	3.228	Alert			
1,400.00	1,400.00	1,400.10	1,400.10	4.82	4.82	-90.34	-0.18	-29.97	29.97	20.33	9.64	3.109	Alert			
1,450.00	1,450.00	1,450.10	1,450.10	5.00	5.00	-90.34	-0.18	-29.97	29.97	19.97	10.00	2.998	Alert			
1,500.00	1,500.00	1,500.10	1,500.10	5.18	5.18	-90.34	-0.18	-29.97	29.97	19.62	10.35	2.894	Alert			
1,550.00	1,550.00	1,550.10	1,550.10	5.36	5.36	-90.34	-0.18	-29.97	29.97	19.26	10.71	2.798	Alert			
1,600.00	1,600.00	1,600.10	1,600.10	5.53	5.53	-90.34	-0.18	-29.97	29.97	18.90	11.07	2.708	Alert			
1,650.00	1,650.00	1,650.10	1,650.10	5.71	5.71	-90.34	-0.18	-29.97	29.97	18.54	11.43	2.623	Alert			
1,700.00	1,700.00	1,700.10	1,700.10	5.89	5.89	-90.34	-0.18	-29.97	29.97	18.19	11.78	2.544	Alert			
1,750.00	1,750.00	1,750.10	1,750.10	6.07	6.07	-90.34	-0.18	-29.97	29.97	17.83	12.14	2.469	Minor Risk			
1,800.00	1,800.00	1,800.10	1,800.10	6.25	6.25	-90.34	-0.18	-29.97	29.97	17.47	12.50	2.398	Minor Risk			
1,850.00	1,850.00	1,850.10	1,850.10	6.43	6.43	-90.34	-0.18	-29.97	29.97	17.12	12.85	2.331	Minor Risk			
1,900.00	1,900.00	1,900.10	1,900.10	6.61	6.61	-90.34	-0.18	-29.97	29.97	16.76	13.21	2.268	Minor Risk			
1,950.00	1,950.00	1,950.10	1,950.10	6.78	6.78	-90.34	-0.18	-29.97	29.97	16.40	13.57	2.209	Minor Risk			
2,000.00	2,000.00	2,000.10	2,000.10	6.96	6.96	-90.34	-0.18	-29.97	29.97	16.04	13.93	2.152	Minor Risk			
2,050.00	2,050.00	2,050.10	2,050.10	7.14	7.14	-90.34	-0.18	-29.97	29.97	15.69	14.28	2.098	Minor Risk			
2,100.00	2,100.00	2,100.10	2,100.10	7.32	7.32	-90.34	-0.18	-29.97	29.97	15.33	14.64	2.047	Minor Risk			
2,150.00	2,150.00	2,150.10	2,150.10	7.50	7.50	-90.34	-0.18	-29.97	29.97	14.97	15.00	1.998	Minor Risk			
2,200.00	2,200.00	2,200.10	2,200.10	7.68	7.68	-90.34	-0.18	-29.97	29.97	14.61	15.36	1.952	Minor Risk			
2,250.00	2,250.00	2,250.10	2,250.10	7.86	7.86	-90.34	-0.18	-29.97	29.97	14.26	15.72	1.907	Minor Risk			
2,300.00	2,300.00	2,300.10	2,300.10	8.04	8.04	-90.34	-0.18	-29.97	29.97	13.90	16.07	1.865	Minor Risk			
2,350.00	2,350.00	2,350.10	2,350.10	8.22	8.22	-90.34	-0.18	-29.97	29.97	13.54	16.43	1.824	Minor Risk			
2,400.00	2,400.00	2,400.10	2,400.10	8.39	8.39	-90.34	-0.18	-29.97	29.97	13.18	16.79	1.785	Minor Risk			
2,450.00	2,450.00	2,450.10	2,450.10	8.57	8.57	-90.34	-0.18	-29.97	29.97	12.82	17.15	1.748	Minor Risk			
2,500.00	2,500.00	2,500.10	2,500.10	8.75	8.75	-90.34	-0.18	-29.97	29.97	12.47	17.50	1.712	Minor Risk			
2,550.00	2,550.00	2,550.10	2,550.10	8.93	8.93	-90.34	-0.18	-29.97	29.97	12.11	17.86	1.678	Minor Risk			

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft	
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,600.00	2,600.00	2,600.10	2,600.10	9.11	9.11	-90.34	-0.18	-29.97	29.97	11.75	18.22	1.645	Minor Risk	
2,650.00	2,650.00	2,650.10	2,650.10	9.29	9.29	-90.34	-0.18	-29.97	29.97	11.39	18.58	1.613	Minor Risk	
2,700.00	2,700.00	2,700.10	2,700.10	9.47	9.47	-90.34	-0.18	-29.97	29.97	11.03	18.94	1.583	Minor Risk	
2,750.00	2,750.00	2,750.10	2,750.10	9.65	9.65	-90.34	-0.18	-29.97	29.97	10.68	19.29	1.553	Minor Risk, CC	
2,800.00	2,800.00	2,800.10	2,800.10	9.82	9.83	157.81	-0.18	-29.97	30.17	10.53	19.65	1.536	Minor Risk, ES	
2,850.00	2,849.99	2,850.09	2,850.09	9.99	10.01	158.27	-0.18	-29.97	30.78	10.79	19.99	1.540	Minor Risk	
2,900.00	2,899.98	2,900.08	2,900.08	10.15	10.18	158.99	-0.18	-29.97	31.80	11.46	20.34	1.563	Minor Risk	
2,950.00	2,949.96	2,950.06	2,950.06	10.32	10.36	159.93	-0.18	-29.97	33.23	12.54	20.68	1.606	Minor Risk	
3,000.00	2,999.92	3,000.02	3,000.02	10.49	10.54	161.03	-0.18	-29.97	35.08	14.04	21.03	1.668	Minor Risk	
3,050.00	3,049.86	3,049.96	3,049.96	10.66	10.72	162.22	-0.18	-29.97	37.35	15.97	21.38	1.747	Minor Risk	
3,100.00	3,099.78	3,100.12	3,099.88	10.83	10.90	163.45	-0.18	-29.97	40.06	18.34	21.73	1.844	Minor Risk	
3,150.00	3,149.68	3,149.78	3,149.78	11.00	11.08	164.67	-0.18	-29.97	43.20	21.13	22.07	1.957	Minor Risk	
3,200.00	3,199.56	3,200.34	3,199.66	11.17	11.26	165.78	-0.18	-29.97	46.49	24.07	22.42	2.073	Minor Risk	
3,250.00	3,249.44	3,249.54	3,249.54	11.34	11.44	166.74	-0.18	-29.97	49.80	27.03	22.77	2.187	Minor Risk	
3,300.00	3,299.33	3,300.57	3,299.43	11.51	11.62	167.59	-0.18	-29.97	53.12	30.00	23.12	2.298	Minor Risk	
3,350.00	3,349.21	3,349.31	3,349.31	11.68	11.79	168.33	-0.18	-29.97	56.45	32.99	23.46	2.406	Minor Risk	
3,400.00	3,399.10	3,400.80	3,399.20	11.86	11.98	168.99	-0.18	-29.97	59.79	35.97	23.82	2.510	Alert	
3,450.00	3,448.98	3,449.08	3,449.08	12.03	12.15	169.58	-0.18	-29.97	63.14	38.97	24.16	2.613	Alert	
3,500.00	3,498.86	3,501.04	3,498.96	12.20	12.34	170.11	-0.18	-29.97	66.49	41.97	24.52	2.712	Alert	
3,550.00	3,548.75	3,548.85	3,548.85	12.38	12.51	170.59	-0.18	-29.97	69.84	44.98	24.86	2.809	Alert	
3,600.00	3,598.63	3,601.27	3,598.73	12.55	12.70	171.03	-0.18	-29.97	73.21	47.99	25.22	2.903	Alert	
3,650.00	3,648.52	3,648.62	3,648.62	12.72	12.86	171.42	-0.18	-29.97	76.57	51.01	25.56	2.996	Alert	
3,700.00	3,698.40	3,701.50	3,698.50	12.90	13.05	171.79	-0.18	-29.97	79.94	54.02	25.92	3.084	Alert	
3,750.00	3,748.28	3,748.38	3,748.38	13.07	13.22	172.12	-0.18	-29.97	83.31	57.05	26.26	3.172	Alert	
3,800.00	3,798.17	3,801.73	3,798.27	13.25	13.41	172.43	-0.18	-29.97	86.69	60.06	26.63	3.256	Alert	
3,850.00	3,848.05	3,848.15	3,848.15	13.42	13.58	172.72	-0.18	-29.97	90.06	63.10	26.97	3.340	Alert	
3,900.00	3,897.93	3,901.97	3,898.03	13.60	13.77	172.98	-0.18	-29.97	93.44	66.11	27.33	3.419	Alert	
3,950.00	3,947.82	3,947.92	3,947.92	13.77	13.94	173.23	-0.18	-29.97	96.82	69.15	27.67	3.499	Alert	
4,000.00	3,997.70	4,002.20	3,997.80	13.95	14.13	173.46	-0.18	-29.97	100.20	72.17	28.04	3.574	Alert	
4,050.00	4,047.59	4,047.69	4,047.69	14.13	14.29	173.67	-0.18	-29.97	103.59	75.22	28.37	3.651	Alert	
4,100.00	4,097.47	4,102.43	4,097.57	14.30	14.49	173.87	-0.18	-29.97	106.97	78.23	28.74	3.722	Alert	
4,150.00	4,147.35	4,147.45	4,147.45	14.48	14.65	174.06	-0.18	-29.97	110.36	81.28	29.08	3.795	Alert	
4,200.00	4,197.24	4,202.66	4,197.34	14.66	14.85	174.24	-0.18	-29.97	113.75	84.30	29.45	3.863	Alert	
4,250.00	4,247.12	4,247.22	4,247.22	14.83	15.01	174.40	-0.18	-29.97	117.13	87.35	29.78	3.933	Alert	
4,300.00	4,297.01	4,302.89	4,297.11	15.01	15.21	174.56	-0.18	-29.97	120.52	90.37	30.16	3.997	Alert	
4,350.00	4,346.89	4,346.99	4,346.99	15.19	15.37	174.71	-0.18	-29.97	123.91	93.43	30.49	4.064	Alert	
4,400.00	4,396.77	4,403.13	4,396.87	15.37	15.57	174.85	-0.18	-29.97	127.30	96.44	30.86	4.125	Alert	
4,450.00	4,446.66	4,446.76	4,446.76	15.55	15.72	174.99	-0.18	-29.97	130.70	99.50	31.19	4.190	Alert	
4,500.00	4,496.54	4,496.64	4,496.64	15.72	15.90	175.11	-0.18	-29.97	134.09	102.54	31.55	4.250	Alert	
4,550.00	4,546.43	4,547.53	4,547.53	15.90	16.08	175.20	-0.32	-29.83	137.31	105.41	31.90	4.305	Alert	
4,600.00	4,596.31	4,598.55	4,598.54	16.08	16.25	175.19	-0.78	-29.37	140.14	107.89	32.25	4.346	Alert	
4,650.00	4,646.19	4,649.60	4,649.58	16.26	16.42	175.10	-1.56	-28.59	142.58	109.99	32.59	4.375	Alert	
4,700.00	4,696.08	4,700.69	4,700.65	16.44	16.59	174.93	-2.67	-27.49	144.62	111.69	32.93	4.392	Alert	
4,750.00	4,745.96	4,751.80	4,751.72	16.62	16.76	174.68	-4.09	-26.06	146.28	113.01	33.27	4.397	Alert	
4,800.00	4,795.85	4,802.13	4,801.99	16.80	16.92	174.38	-5.74	-24.41	147.63	114.03	33.61	4.393	Alert	
4,850.00	4,845.73	4,852.11	4,851.92	16.98	17.09	174.07	-7.39	-22.76	148.98	115.03	33.95	4.388	Alert	
4,900.00	4,895.61	4,902.08	4,901.84	17.15	17.25	173.78	-9.04	-21.11	150.33	116.04	34.29	4.384	Alert	
4,950.00	4,945.50	4,952.06	4,951.76	17.33	17.42	173.49	-10.69	-19.47	151.68	117.05	34.63	4.380	Alert	
5,000.00	4,995.38	5,002.03	5,001.68	17.51	17.59	173.20	-12.33	-17.82	153.03	118.06	34.97	4.376	Alert	
5,050.00	5,045.27	5,052.01	5,051.60	17.69	17.75	172.92	-13.98	-16.17	154.39	119.08	35.32	4.372	Alert	
5,100.00	5,095.15	5,101.98	5,101.52	17.87	17.92	172.64	-15.63	-14.52	155.76	120.10	35.66	4.368	Alert	
5,150.00	5,145.03	5,151.96	5,151.44	18.05	18.09	172.37	-17.28	-12.87	157.12	121.12	36.00	4.364	Alert	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
5,200.00	5,194.92	5,201.94	5,201.37	18.23	18.25	172.11	-18.93	-11.22	158.49	122.15	36.35	4.361	Alert			
5,250.00	5,244.80	5,251.91	5,251.29	18.41	18.42	171.85	-20.58	-9.57	159.87	123.18	36.69	4.357	Alert			
5,300.00	5,294.68	5,301.89	5,301.21	18.59	18.59	171.59	-22.23	-7.92	161.24	124.21	37.03	4.354	Alert			
5,350.00	5,344.57	5,351.86	5,351.13	18.77	18.76	171.34	-23.88	-6.27	162.62	125.24	37.38	4.351	Alert			
5,400.00	5,394.45	5,401.84	5,401.05	18.95	18.93	171.09	-25.53	-4.62	164.00	126.28	37.72	4.348	Alert			
5,450.00	5,444.34	5,451.82	5,450.97	19.14	19.10	170.84	-27.18	-2.97	165.39	127.32	38.07	4.345	Alert			
5,500.00	5,494.22	5,501.79	5,500.89	19.32	19.26	170.60	-28.83	-1.32	166.78	128.37	38.41	4.342	Alert			
5,550.00	5,544.10	5,551.77	5,550.82	19.50	19.43	170.37	-30.48	0.33	168.17	129.41	38.76	4.339	Alert			
5,600.00	5,593.99	5,601.74	5,600.74	19.68	19.60	170.13	-32.12	1.97	169.57	130.46	39.11	4.336	Alert			
5,650.00	5,643.87	5,651.72	5,650.66	19.86	19.77	169.90	-33.77	3.62	170.96	131.51	39.45	4.333	Alert			
5,700.00	5,693.76	5,701.69	5,700.58	20.04	19.94	169.68	-35.42	5.27	172.36	132.56	39.80	4.331	Alert			
5,750.00	5,743.64	5,751.67	5,750.50	20.22	20.11	169.46	-37.07	6.92	173.77	133.62	40.15	4.328	Alert			
5,800.00	5,793.52	5,801.65	5,800.42	20.40	20.28	169.24	-38.72	8.57	175.17	134.68	40.50	4.326	Alert			
5,850.00	5,843.41	5,851.62	5,850.34	20.58	20.45	169.03	-40.37	10.22	176.58	135.74	40.84	4.323	Alert			
5,900.00	5,893.29	5,901.60	5,900.27	20.76	20.62	168.81	-42.02	11.87	177.99	136.80	41.19	4.321	Alert			
5,950.00	5,943.18	5,951.57	5,950.19	20.95	20.80	168.61	-43.67	13.52	179.40	137.86	41.54	4.319	Alert			
6,000.00	5,993.06	6,001.55	6,000.11	21.13	20.97	168.40	-45.32	15.17	180.82	138.93	41.89	4.317	Alert			
6,050.00	6,042.94	6,051.53	6,050.03	21.31	21.14	168.20	-46.97	16.82	182.23	140.00	42.24	4.315	Alert			
6,100.00	6,092.83	6,101.50	6,099.95	21.49	21.31	168.00	-48.62	18.47	183.65	141.07	42.59	4.313	Alert			
6,150.00	6,142.71	6,151.48	6,149.87	21.67	21.48	167.81	-50.27	20.12	185.08	142.14	42.94	4.311	Alert			
6,200.00	6,192.60	6,201.45	6,199.79	21.85	21.65	167.62	-51.91	21.76	186.50	143.21	43.28	4.309	Alert			
6,250.00	6,242.48	6,251.43	6,249.72	22.04	21.82	167.43	-53.56	23.41	187.92	144.29	43.63	4.307	Alert			
6,300.00	6,292.36	6,301.40	6,299.64	22.22	22.00	167.24	-55.21	25.06	189.35	145.37	43.98	4.305	Alert			
6,350.00	6,342.25	6,351.38	6,349.56	22.40	22.17	167.06	-56.86	26.71	190.78	146.45	44.33	4.303	Alert			
6,400.00	6,392.13	6,401.36	6,399.48	22.58	22.34	166.88	-58.51	28.36	192.21	147.53	44.69	4.301	Alert			
6,450.00	6,442.02	6,451.33	6,449.40	22.76	22.51	166.70	-60.16	30.01	193.65	148.61	45.04	4.300	Alert			
6,500.00	6,491.90	6,501.31	6,499.32	22.95	22.69	166.52	-61.81	31.66	195.08	149.70	45.39	4.298	Alert			
6,550.00	6,541.78	6,551.28	6,549.24	23.13	22.86	166.35	-63.46	33.31	196.52	150.78	45.74	4.297	Alert			
6,600.00	6,591.67	6,601.26	6,599.16	23.31	23.03	166.18	-65.11	34.96	197.96	151.87	46.09	4.295	Alert			
6,650.00	6,641.55	6,651.24	6,649.09	23.49	23.21	166.01	-66.76	36.61	199.40	152.96	46.44	4.294	Alert			
6,700.00	6,691.43	6,701.21	6,699.01	23.68	23.38	165.85	-68.41	38.26	200.84	154.05	46.79	4.292	Alert			
6,750.00	6,741.32	6,751.19	6,748.93	23.86	23.55	165.68	-70.06	39.91	202.29	155.14	47.14	4.291	Alert			
6,800.00	6,791.20	6,801.16	6,798.85	24.04	23.73	165.52	-71.71	41.55	203.73	156.23	47.50	4.289	Alert			
6,850.00	6,841.09	6,851.14	6,848.77	24.22	23.90	165.36	-73.35	43.20	205.18	157.33	47.85	4.288	Alert			
6,900.00	6,890.97	6,901.12	6,898.69	24.41	24.07	165.21	-75.00	44.85	206.63	158.43	48.20	4.287	Alert			
6,950.00	6,940.85	6,951.09	6,948.61	24.59	24.25	165.05	-76.65	46.50	208.08	159.52	48.55	4.285	Alert			
7,000.00	6,990.74	7,001.07	6,998.54	24.77	24.42	164.90	-78.30	48.15	209.53	160.62	48.91	4.284	Alert			
7,050.00	7,040.62	7,051.04	7,048.46	24.95	24.60	164.75	-79.95	49.80	210.98	161.72	49.26	4.283	Alert			
7,100.00	7,090.51	7,101.02	7,098.38	25.14	24.77	164.60	-81.60	51.45	212.44	162.82	49.61	4.282	Alert			
7,150.00	7,140.39	7,150.99	7,148.30	25.32	24.95	164.46	-83.25	53.10	213.89	163.93	49.97	4.281	Alert			
7,200.00	7,190.27	7,200.97	7,198.22	25.50	25.12	164.31	-84.90	54.75	215.35	165.03	50.32	4.280	Alert			
7,250.00	7,240.16	7,250.95	7,248.14	25.68	25.30	164.17	-86.55	56.40	216.81	166.14	50.67	4.279	Alert			
7,300.00	7,290.04	7,300.92	7,298.06	25.87	25.47	164.03	-88.20	58.05	218.27	167.24	51.03	4.278	Alert			
7,350.00	7,339.93	7,350.90	7,347.99	26.05	25.65	163.89	-89.85	59.70	219.73	168.35	51.38	4.277	Alert			
7,400.00	7,389.81	7,400.87	7,397.91	26.23	25.82	163.75	-91.50	61.35	221.19	169.46	51.73	4.276	Alert			
7,450.00	7,439.69	7,450.85	7,447.83	26.42	26.00	163.62	-93.14	62.99	222.66	170.57	52.09	4.275	Alert			
7,500.00	7,489.58	7,500.83	7,497.75	26.60	26.17	163.49	-94.79	64.64	224.12	171.68	52.44	4.274	Alert			
7,550.00	7,539.46	7,550.80	7,547.67	26.78	26.35	163.36	-96.44	66.29	225.59	172.79	52.80	4.273	Alert			
7,600.00	7,589.35	7,600.78	7,597.59	26.96	26.52	163.23	-98.09	67.94	227.05	173.90	53.15	4.272	Alert			
7,650.00	7,639.23	7,650.75	7,647.51	27.15	26.70	163.10	-99.74	69.59	228.52	175.02	53.51	4.271	Alert			
7,700.00	7,689.11	7,700.73	7,697.44	27.33	26.87	162.97	-101.39	71.24	229.99	176.13	53.86	4.270	Alert			
7,750.00	7,739.00	7,750.70	7,747.36	27.51	27.05	162.85	-103.04	72.89	231.46	177.25	54.22	4.269	Alert			

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design											Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1			Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM														Offset Well Error: 0.50 ft	
Reference		Offset		Semi Major Axis				Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
7,800.00	7,788.88	7,800.68	7,797.28	27.70	27.22	162.73	-104.69	74.54	232.94	178.36	54.57	4.268	Alert		
7,850.00	7,838.76	7,850.66	7,847.20	27.88	27.40	162.60	-106.34	76.19	234.41	179.48	54.93	4.268	Alert		
7,900.00	7,888.65	7,900.63	7,897.12	28.06	27.58	162.48	-107.99	77.84	235.88	180.60	55.28	4.267	Alert		
7,950.00	7,938.53	7,950.61	7,947.04	28.25	27.75	162.37	-109.64	79.49	237.36	181.72	55.64	4.266	Alert		
8,000.00	7,988.42	8,000.58	7,996.96	28.43	27.93	162.25	-111.29	81.14	238.83	182.84	55.99	4.265	Alert		
8,050.00	8,038.30	8,050.56	8,046.89	28.61	28.10	162.13	-112.93	82.78	240.31	183.96	56.35	4.265	Alert		
8,100.00	8,088.18	8,100.54	8,096.81	28.80	28.28	162.02	-114.58	84.43	241.79	185.08	56.70	4.264	Alert		
8,150.00	8,138.07	8,150.51	8,146.73	28.98	28.46	161.91	-116.23	86.08	243.27	186.21	57.06	4.263	Alert		
8,200.00	8,187.95	8,200.49	8,196.65	29.16	28.63	161.79	-117.88	87.73	244.75	187.33	57.42	4.263	Alert		
8,250.00	8,237.84	8,250.46	8,246.57	29.35	28.81	161.68	-119.53	89.38	246.23	188.45	57.77	4.262	Alert		
8,300.00	8,287.72	8,300.44	8,296.49	29.53	28.99	161.58	-121.18	91.03	247.71	189.58	58.13	4.261	Alert		
8,350.00	8,337.60	8,350.41	8,346.41	29.71	29.16	161.47	-122.83	92.68	249.19	190.71	58.49	4.261	Alert		
8,400.00	8,387.49	8,400.39	8,396.34	29.90	29.34	161.36	-124.48	94.33	250.67	191.83	58.84	4.260	Alert		
8,450.00	8,437.37	8,450.37	8,446.26	30.08	29.52	161.26	-126.13	95.98	252.16	192.96	59.20	4.260	Alert		
8,500.00	8,487.26	8,500.34	8,496.18	30.27	29.69	161.15	-127.78	97.63	253.64	194.09	59.56	4.259	Alert		
8,550.00	8,537.14	8,550.32	8,546.10	30.45	29.87	161.05	-129.43	99.28	255.13	195.22	59.91	4.258	Alert		
8,600.00	8,587.02	8,600.29	8,596.02	30.63	30.05	160.95	-131.08	100.93	256.62	196.35	60.27	4.258	Alert		
8,650.00	8,636.91	8,650.27	8,645.94	30.82	30.22	160.85	-132.73	102.57	258.10	197.48	60.63	4.257	Alert		
8,700.00	8,686.79	8,700.25	8,695.86	31.00	30.40	160.75	-134.37	104.22	259.59	198.61	60.98	4.257	Alert		
8,750.00	8,736.68	8,750.22	8,745.78	31.18	30.58	160.65	-136.02	105.87	261.08	199.74	61.34	4.256	Alert		
8,800.00	8,786.56	8,800.20	8,795.71	31.37	30.76	160.56	-137.67	107.52	262.57	200.87	61.70	4.256	Alert		
8,850.00	8,836.44	8,850.17	8,845.63	31.55	30.93	160.46	-139.32	109.17	264.06	202.01	62.05	4.255	Alert		
8,900.00	8,886.33	8,900.15	8,895.55	31.73	31.11	160.37	-140.97	110.82	265.55	203.14	62.41	4.255	Alert		
8,950.00	8,936.21	8,950.12	8,945.47	31.92	31.29	160.27	-142.62	112.47	267.04	204.27	62.77	4.254	Alert		
9,000.00	8,986.10	9,000.10	8,995.39	32.10	31.47	160.18	-144.27	114.12	268.54	205.41	63.13	4.254	Alert		
9,050.00	9,035.98	9,050.08	9,045.31	32.29	31.64	160.09	-145.92	115.77	270.03	206.55	63.48	4.253	Alert		
9,100.00	9,085.86	9,100.05	9,095.23	32.47	31.82	160.00	-147.57	117.42	271.52	207.68	63.84	4.253	Alert		
9,150.00	9,135.75	9,150.03	9,145.16	32.65	32.00	159.91	-149.22	119.07	273.02	208.82	64.20	4.253	Alert		
9,200.00	9,185.63	9,200.00	9,195.08	32.84	32.18	159.82	-150.87	120.72	274.51	209.96	64.56	4.252	Alert		
9,250.00	9,235.51	9,249.98	9,245.00	33.02	32.35	159.73	-152.52	122.37	276.01	211.09	64.92	4.252	Alert		
9,300.00	9,285.40	9,300.04	9,294.92	33.21	32.53	159.65	-154.16	124.01	277.51	212.23	65.27	4.251	Alert		
9,350.00	9,335.28	9,349.93	9,344.84	33.39	32.71	159.56	-155.81	125.66	279.00	213.37	65.63	4.251	Alert		
9,400.00	9,385.17	9,400.09	9,394.76	33.57	32.89	159.48	-157.46	127.31	280.50	214.51	65.99	4.251	Alert		
9,450.00	9,435.05	9,449.88	9,444.68	33.76	33.07	159.39	-159.11	128.96	282.00	215.65	66.35	4.250	Alert		
9,500.00	9,484.93	9,500.14	9,494.61	33.94	33.25	159.31	-160.76	130.61	283.50	216.79	66.71	4.250	Alert		
9,550.00	9,534.82	9,549.84	9,544.53	34.13	33.42	159.23	-162.41	132.26	285.00	217.93	67.06	4.250	Alert		
9,600.00	9,584.70	9,600.19	9,594.45	34.31	33.60	159.15	-164.06	133.91	286.50	219.07	67.42	4.249	Alert		
9,650.00	9,634.59	9,649.79	9,644.37	34.49	33.78	159.06	-165.71	135.56	288.00	220.22	67.78	4.249	Alert		
9,700.00	9,684.47	9,700.24	9,694.29	34.68	33.96	158.99	-167.36	137.21	289.50	221.36	68.14	4.248	Alert		
9,750.00	9,734.35	9,749.74	9,744.21	34.86	34.14	158.91	-169.01	138.86	291.00	222.50	68.50	4.248	Alert		
9,800.00	9,784.24	9,800.29	9,794.13	35.05	34.32	158.83	-170.66	140.51	292.51	223.65	68.86	4.248	Alert		
9,850.00	9,834.12	9,849.69	9,844.06	35.23	34.49	158.75	-172.31	142.16	294.01	224.79	69.22	4.248	Alert		
9,900.00	9,884.01	9,900.33	9,893.98	35.41	34.67	158.68	-173.95	143.80	295.51	225.93	69.58	4.247	Alert		
9,950.00	9,933.89	9,949.64	9,943.90	35.60	34.85	158.60	-175.60	145.45	297.02	227.08	69.93	4.247	Alert		
10,000.00	9,983.77	9,999.62	9,993.82	35.78	35.03	158.52	-177.25	147.10	298.52	228.23	70.29	4.247	Alert		
10,050.00	10,033.66	10,049.59	10,043.74	35.97	35.21	158.45	-178.90	148.75	300.03	229.37	70.65	4.247	Alert		
10,100.00	10,083.54	10,100.43	10,093.66	36.15	35.39	158.38	-180.55	150.40	301.53	230.52	71.01	4.246	Alert		
10,150.00	10,133.43	10,149.55	10,143.58	36.34	35.56	158.30	-182.20	152.05	303.04	231.67	71.37	4.246	Alert		
10,200.00	10,183.31	10,200.48	10,193.51	36.52	35.74	158.23	-183.85	153.70	304.54	232.81	71.73	4.246	Alert		
10,250.00	10,233.19	10,249.50	10,243.43	36.70	35.92	158.16	-185.50	155.35	306.05	233.96	72.09	4.245	Alert		
10,300.00	10,283.08	10,300.53	10,293.35	36.89	36.10	158.09	-187.15	157.00	307.56	235.11	72.45	4.245	Alert		
10,350.00	10,332.96	10,349.45	10,343.27	37.07	36.28	158.02	-188.80	158.65	309.07	236.26	72.81	4.245	Alert		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1												Offset Well Error:	0.50 ft
Survey Program: 0-MWD+HDGM													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,400.00	10,382.85	10,400.58	10,393.19	37.26	36.46	157.95	-190.45	160.30	310.57	237.40	73.17	4.244	Alert
10,450.00	10,432.73	10,449.40	10,443.11	37.44	36.63	157.88	-192.10	161.95	312.08	238.56	73.53	4.244	Alert
10,500.00	10,482.61	10,499.38	10,493.03	37.62	36.81	157.82	-193.75	163.60	313.59	239.71	73.89	4.244	Alert
10,550.00	10,532.50	10,549.35	10,542.96	37.81	36.99	157.75	-195.39	165.24	315.10	240.86	74.25	4.244	Alert
10,600.00	10,582.38	10,599.33	10,592.88	37.99	37.17	157.68	-197.04	166.89	316.61	242.01	74.61	4.244	Alert
10,650.00	10,632.26	10,646.86	10,640.37	38.18	37.34	157.65	-198.45	168.30	318.29	243.34	74.95	4.246	Alert
10,700.00	10,682.17	10,694.05	10,687.54	38.36	37.51	157.68	-199.44	169.29	320.15	244.85	75.30	4.252	Alert
10,750.00	10,732.10	10,741.23	10,734.71	38.54	37.67	157.75	-200.01	169.86	321.85	246.21	75.63	4.255	Alert
10,800.00	10,782.07	10,788.69	10,782.17	38.72	37.84	157.84	-200.18	170.03	323.37	247.40	75.97	4.257	Alert
10,850.00	10,832.06	10,838.68	10,832.16	38.90	38.01	157.93	-200.18	170.03	324.46	248.14	76.32	4.251	Alert
10,900.00	10,882.05	10,888.68	10,882.15	39.08	38.19	157.97	-200.18	170.03	324.94	248.27	76.67	4.238	Alert
10,950.00	10,932.05	10,938.68	10,932.15	39.25	38.36	-90.03	-200.18	170.03	324.97	247.96	77.01	4.220	Alert
11,000.00	10,982.05	10,988.68	10,982.15	39.42	38.53	-90.03	-200.18	170.03	324.97	247.61	77.36	4.201	Alert
11,050.00	11,032.05	11,038.68	11,032.15	39.59	38.71	-90.03	-200.18	170.03	324.97	247.27	77.70	4.182	Alert
11,100.00	11,082.05	11,088.68	11,082.15	39.76	38.88	-90.03	-200.18	170.03	324.97	246.93	78.04	4.164	Alert
11,106.45	11,088.50	11,095.12	11,088.60	39.78	38.90	-90.03	-200.18	170.03	324.97	246.88	78.09	4.162	Alert
11,150.00	11,132.05	11,138.66	11,132.14	39.92	39.05	-90.03	-200.16	170.03	324.97	246.58	78.39	4.146	Alert
11,200.00	11,182.05	11,188.33	11,181.72	40.09	39.22	-89.57	-197.56	170.01	325.00	246.28	78.72	4.128	Alert
11,250.00	11,232.05	11,237.19	11,230.10	40.26	39.38	-88.38	-190.83	169.97	325.16	246.13	79.03	4.114	Alert
11,300.00	11,282.03	11,284.83	11,276.55	40.43	39.54	-86.31	-180.33	169.91	325.67	246.35	79.31	4.108	Alert
11,350.00	11,331.74	11,331.67	11,321.22	40.60	39.68	-84.60	-166.27	169.82	326.47	246.90	79.57	4.103	Alert
11,400.00	11,380.81	11,377.82	11,363.96	40.76	39.82	-82.94	-148.90	169.71	327.54	247.75	79.78	4.105	Alert
11,450.00	11,428.85	11,423.32	11,404.61	40.91	39.95	-81.35	-128.46	169.58	328.83	248.87	79.95	4.113	Alert
11,500.00	11,475.52	11,468.24	11,443.01	41.05	40.07	-79.84	-105.18	169.43	330.30	250.23	80.07	4.125	Alert
11,550.00	11,520.44	11,512.62	11,479.04	41.18	40.18	-78.41	-79.30	169.27	331.91	251.77	80.14	4.142	Alert
11,600.00	11,563.29	11,556.51	11,512.61	41.30	40.28	-77.08	-51.04	169.09	333.61	253.46	80.15	4.162	Alert
11,650.00	11,603.72	11,599.96	11,543.61	41.41	40.38	-75.84	-20.61	168.90	335.35	255.24	80.11	4.186	Alert
11,700.00	11,641.45	11,643.01	11,571.97	41.50	40.48	-74.71	11.77	168.70	337.09	257.07	80.03	4.212	Alert
11,750.00	11,676.17	11,685.72	11,597.61	41.58	40.57	-73.69	45.91	168.49	338.78	258.87	79.91	4.240	Alert
11,800.00	11,707.62	11,728.12	11,620.49	41.65	40.67	-72.78	81.59	168.26	340.38	260.61	79.78	4.267	Alert
11,850.00	11,735.57	11,770.25	11,640.55	41.71	40.76	-71.98	118.63	168.03	341.86	262.22	79.64	4.293	Alert
11,900.00	11,759.81	11,812.16	11,657.75	41.75	40.86	-71.30	156.84	167.79	343.17	263.66	79.51	4.316	Alert
11,950.00	11,780.14	11,853.88	11,672.05	41.79	40.95	-70.75	196.02	167.55	344.29	264.88	79.41	4.336	Alert
12,000.00	11,796.41	11,895.45	11,683.43	41.84	41.05	-70.31	235.99	167.30	345.20	265.85	79.35	4.350	Alert
12,050.00	11,808.50	11,936.91	11,691.87	41.94	41.14	-69.99	276.57	167.04	345.87	266.53	79.34	4.359	Alert
12,100.00	11,816.32	11,978.29	11,697.34	42.05	41.23	-69.79	317.58	166.78	346.29	266.89	79.39	4.362	Alert
12,150.00	11,819.80	12,019.64	11,699.83	42.16	41.32	-69.72	358.84	166.52	346.45	266.94	79.51	4.357	Alert
12,200.00	11,820.00	12,066.72	11,700.00	42.28	41.43	-69.72	405.92	166.23	346.45	266.74	79.70	4.347	Alert
12,250.00	11,820.00	12,116.72	11,700.00	42.41	41.56	-69.72	455.92	165.92	346.45	266.52	79.93	4.335	Alert
12,300.00	11,820.00	12,166.72	11,700.00	42.54	41.69	-69.72	505.92	165.60	346.45	266.28	80.16	4.322	Alert
12,350.00	11,820.00	12,216.72	11,700.00	42.70	41.84	-69.72	555.92	165.29	346.45	266.02	80.43	4.307	Alert
12,400.00	11,820.00	12,266.72	11,700.00	42.86	42.00	-69.72	605.92	164.98	346.45	265.73	80.71	4.292	Alert
12,450.00	11,820.00	12,316.72	11,700.00	43.04	42.18	-69.72	655.92	164.66	346.45	265.42	81.03	4.276	Alert
12,500.00	11,820.00	12,366.72	11,700.00	43.22	42.36	-69.72	705.91	164.35	346.45	265.09	81.36	4.258	Alert
12,550.00	11,820.00	12,416.72	11,700.00	43.42	42.56	-69.72	755.91	164.04	346.45	264.73	81.71	4.240	Alert
12,600.00	11,820.00	12,466.72	11,700.00	43.62	42.77	-69.72	805.91	163.72	346.45	264.36	82.09	4.220	Alert
12,650.00	11,820.00	12,516.72	11,700.00	43.84	42.98	-69.72	855.91	163.41	346.44	263.96	82.49	4.200	Alert
12,700.00	11,820.00	12,566.72	11,700.00	44.07	43.22	-69.72	905.91	163.09	346.44	263.54	82.91	4.179	Alert
12,750.00	11,820.00	12,616.72	11,700.00	44.31	43.46	-69.72	955.91	162.78	346.44	263.09	83.35	4.156	Alert
12,800.00	11,820.00	12,666.72	11,700.00	44.55	43.71	-69.72	1,005.91	162.47	346.44	262.64	83.81	4.134	Alert
12,850.00	11,820.00	12,716.72	11,700.00	44.82	43.97	-69.72	1,055.91	162.15	346.44	262.15	84.30	4.110	Alert
12,900.00	11,820.00	12,766.72	11,700.00	45.08	44.25	-69.72	1,105.91	161.84	346.44	261.65	84.80	4.086	Alert

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
12,950.00	11,820.00	12,816.72	11,700.00	45.37	44.53	-69.72	1,155.91	161.53	346.44	261.12	85.32	4.060	Alert			
13,000.00	11,820.00	12,866.72	11,700.00	45.65	44.82	-69.72	1,205.90	161.21	346.44	260.58	85.86	4.035	Alert			
13,050.00	11,820.00	12,916.72	11,700.00	45.95	45.12	-69.72	1,255.90	160.90	346.44	260.02	86.42	4.009	Alert			
13,100.00	11,820.00	12,966.72	11,700.00	46.26	45.44	-69.72	1,305.90	160.59	346.44	259.44	87.00	3.982	Alert			
13,150.00	11,820.00	13,016.72	11,700.00	46.58	45.76	-69.72	1,355.90	160.27	346.44	258.84	87.60	3.955	Alert			
13,200.00	11,820.00	13,066.72	11,700.00	46.90	46.09	-69.72	1,405.90	159.96	346.44	258.23	88.22	3.927	Alert			
13,250.00	11,820.00	13,116.72	11,700.00	47.24	46.43	-69.72	1,455.90	159.65	346.44	257.59	88.85	3.899	Alert			
13,300.00	11,820.00	13,166.72	11,700.00	47.58	46.78	-69.72	1,505.90	159.33	346.44	256.94	89.50	3.871	Alert			
13,350.00	11,820.00	13,216.72	11,700.00	47.93	47.14	-69.72	1,555.90	159.02	346.44	256.27	90.17	3.842	Alert			
13,400.00	11,820.00	13,266.72	11,700.00	48.29	47.51	-69.72	1,605.90	158.71	346.44	255.59	90.85	3.813	Alert			
13,450.00	11,820.00	13,316.72	11,700.00	48.66	47.88	-69.72	1,655.90	158.39	346.44	254.89	91.56	3.784	Alert			
13,500.00	11,820.00	13,366.72	11,700.00	49.04	48.27	-69.72	1,705.89	158.08	346.44	254.17	92.27	3.755	Alert			
13,550.00	11,820.00	13,416.72	11,700.00	49.42	48.66	-69.72	1,755.89	157.77	346.44	253.44	93.00	3.725	Alert			
13,600.00	11,820.00	13,466.72	11,700.00	49.81	49.06	-69.72	1,805.89	157.45	346.44	252.69	93.75	3.695	Alert			
13,650.00	11,820.00	13,516.72	11,700.00	50.21	49.46	-69.72	1,855.89	157.14	346.44	251.93	94.51	3.666	Alert			
13,700.00	11,820.00	13,566.72	11,700.00	50.62	49.88	-69.72	1,905.89	156.83	346.44	251.16	95.29	3.636	Alert			
13,750.00	11,820.00	13,616.72	11,700.00	51.04	50.30	-69.72	1,955.89	156.51	346.44	250.36	96.08	3.606	Alert			
13,800.00	11,820.00	13,666.72	11,700.00	51.45	50.72	-69.72	2,005.89	156.20	346.44	249.56	96.88	3.576	Alert			
13,850.00	11,820.00	13,716.72	11,700.00	51.88	51.16	-69.72	2,055.89	155.88	346.44	248.74	97.70	3.546	Alert			
13,900.00	11,820.00	13,766.72	11,700.00	52.31	51.60	-69.72	2,105.89	155.57	346.44	247.92	98.52	3.516	Alert			
13,950.00	11,820.00	13,816.72	11,700.00	52.76	52.05	-69.72	2,155.89	155.26	346.44	247.07	99.37	3.486	Alert			
14,000.00	11,820.00	13,866.72	11,700.00	53.20	52.50	-69.72	2,205.88	154.94	346.44	246.22	100.22	3.457	Alert			
14,050.00	11,820.00	13,916.72	11,700.00	53.66	52.96	-69.72	2,255.88	154.63	346.44	245.35	101.09	3.427	Alert			
14,100.00	11,820.00	13,966.72	11,700.00	54.11	53.43	-69.72	2,305.88	154.32	346.44	244.48	101.97	3.398	Alert			
14,150.00	11,820.00	14,016.72	11,700.00	54.58	53.90	-69.72	2,355.88	154.00	346.44	243.58	102.86	3.368	Alert			
14,200.00	11,820.00	14,066.72	11,700.00	55.05	54.38	-69.72	2,405.88	153.69	346.44	242.68	103.76	3.339	Alert			
14,250.00	11,820.00	14,116.72	11,700.00	55.53	54.86	-69.72	2,455.88	153.38	346.44	241.77	104.67	3.310	Alert			
14,300.00	11,820.00	14,166.72	11,700.00	56.01	55.35	-69.72	2,505.88	153.06	346.44	240.85	105.59	3.281	Alert			
14,350.00	11,820.00	14,216.72	11,700.00	56.50	55.84	-69.72	2,555.88	152.75	346.44	239.92	106.52	3.252	Alert			
14,400.00	11,820.00	14,266.72	11,700.00	56.99	56.34	-69.72	2,605.88	152.44	346.44	238.98	107.46	3.224	Alert			
14,450.00	11,820.00	14,316.72	11,700.00	57.49	56.84	-69.72	2,655.88	152.12	346.44	238.02	108.42	3.195	Alert			
14,500.00	11,820.00	14,366.72	11,700.00	57.98	57.35	-69.72	2,705.88	151.81	346.44	237.06	109.38	3.167	Alert			
14,550.00	11,820.00	14,416.72	11,700.00	58.49	57.87	-69.72	2,755.87	151.50	346.44	236.09	110.35	3.139	Alert			
14,600.00	11,820.00	14,466.72	11,700.00	59.00	58.38	-69.72	2,805.87	151.18	346.44	235.11	111.33	3.112	Alert			
14,650.00	11,820.00	14,516.72	11,700.00	59.52	58.91	-69.72	2,855.87	150.87	346.44	234.12	112.32	3.084	Alert			
14,700.00	11,820.00	14,566.72	11,700.00	60.04	59.43	-69.72	2,905.87	150.56	346.44	233.13	113.31	3.057	Alert			
14,750.00	11,820.00	14,616.72	11,700.00	60.57	59.96	-69.72	2,955.87	150.24	346.44	232.12	114.32	3.030	Alert			
14,800.00	11,820.00	14,666.72	11,700.00	61.09	60.50	-69.72	3,005.87	149.93	346.44	231.11	115.33	3.004	Alert			
14,850.00	11,820.00	14,716.72	11,700.00	61.63	61.04	-69.72	3,055.87	149.61	346.44	230.09	116.35	2.977	Alert			
14,900.00	11,820.00	14,766.72	11,700.00	62.16	61.58	-69.72	3,105.87	149.30	346.44	229.06	117.38	2.951	Alert			
14,950.00	11,820.00	14,816.72	11,700.00	62.70	62.13	-69.72	3,155.87	148.99	346.44	228.02	118.42	2.926	Alert			
15,000.00	11,820.00	14,866.72	11,700.00	63.25	62.68	-69.72	3,205.87	148.67	346.44	226.98	119.46	2.900	Alert			
15,050.00	11,820.00	14,916.72	11,700.00	63.80	63.23	-69.72	3,255.86	148.36	346.44	225.93	120.51	2.875	Alert			
15,100.00	11,820.00	14,966.72	11,700.00	64.35	63.79	-69.72	3,305.86	148.05	346.44	224.87	121.57	2.850	Alert			
15,150.00	11,820.00	15,016.72	11,700.00	64.90	64.35	-69.72	3,355.86	147.73	346.44	223.80	122.63	2.825	Alert			
15,200.00	11,820.00	15,066.72	11,700.00	65.46	64.92	-69.72	3,405.86	147.42	346.44	222.73	123.70	2.801	Alert			
15,250.00	11,820.00	15,116.72	11,700.00	66.02	65.48	-69.72	3,455.86	147.11	346.44	221.65	124.78	2.776	Alert			
15,300.00	11,820.00	15,166.72	11,700.00	66.59	66.05	-69.72	3,505.86	146.79	346.44	220.57	125.87	2.752	Alert			
15,350.00	11,820.00	15,216.72	11,700.00	67.16	66.63	-69.72	3,555.86	146.48	346.44	219.48	126.96	2.729	Alert			
15,400.00	11,820.00	15,266.72	11,700.00	67.73	67.20	-69.72	3,605.86	146.17	346.44	218.39	128.05	2.705	Alert			
15,450.00	11,820.00	15,316.72	11,700.00	68.30	67.78	-69.72	3,655.86	145.85	346.44	217.28	129.15	2.682	Alert			
15,500.00	11,820.00	15,366.72	11,700.00	68.88	68.37	-69.72	3,705.86	145.54	346.44	216.18	130.26	2.660	Alert			

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
15,550.00	11,820.00	15,416.72	11,700.00	69.46	68.95	-69.72	3,755.85	145.23	346.44	215.07	131.37	2.637	Alert	
15,600.00	11,820.00	15,466.72	11,700.00	70.04	69.54	-69.72	3,805.85	144.91	346.44	213.95	132.49	2.615	Alert	
15,650.00	11,820.00	15,516.72	11,700.00	70.63	70.13	-69.72	3,855.85	144.60	346.44	212.82	133.61	2.593	Alert	
15,700.00	11,820.00	15,566.72	11,700.00	71.21	70.72	-69.72	3,905.85	144.29	346.44	211.70	134.74	2.571	Alert	
15,750.00	11,820.00	15,616.72	11,700.00	71.80	71.32	-69.72	3,955.85	143.97	346.44	210.56	135.87	2.550	Alert	
15,800.00	11,820.00	15,666.72	11,700.00	72.40	71.92	-69.72	4,005.85	143.66	346.44	209.43	137.01	2.529	Alert	
15,850.00	11,820.00	15,716.72	11,700.00	72.99	72.52	-69.72	4,055.85	143.35	346.44	208.28	138.15	2.508	Alert	
15,900.00	11,820.00	15,766.72	11,700.00	73.59	73.12	-69.72	4,105.85	143.03	346.44	207.14	139.30	2.487	Minor Risk	
15,950.00	11,820.00	15,816.72	11,700.00	74.19	73.73	-69.72	4,155.85	142.72	346.44	205.99	140.45	2.467	Minor Risk	
16,000.00	11,820.00	15,866.72	11,700.00	74.79	74.34	-69.72	4,205.85	142.40	346.44	204.83	141.61	2.446	Minor Risk	
16,050.00	11,820.00	15,916.72	11,700.00	75.40	74.94	-69.72	4,255.84	142.09	346.44	203.67	142.77	2.427	Minor Risk	
16,100.00	11,820.00	15,966.72	11,700.00	76.01	75.56	-69.72	4,305.84	141.78	346.44	202.51	143.93	2.407	Minor Risk	
16,150.00	11,820.00	16,016.72	11,700.00	76.62	76.17	-69.72	4,355.84	141.46	346.44	201.34	145.10	2.388	Minor Risk	
16,200.00	11,820.00	16,066.72	11,700.00	77.23	76.79	-69.72	4,405.84	141.15	346.44	200.17	146.27	2.368	Minor Risk	
16,250.00	11,820.00	16,116.72	11,700.00	77.84	77.40	-69.72	4,455.84	140.84	346.43	198.99	147.45	2.350	Minor Risk	
16,300.00	11,820.00	16,166.72	11,700.00	78.45	78.02	-69.72	4,505.84	140.52	346.43	197.81	148.63	2.331	Minor Risk	
16,350.00	11,820.00	16,216.72	11,700.00	79.07	78.65	-69.72	4,555.84	140.21	346.43	196.63	149.81	2.313	Minor Risk	
16,400.00	11,820.00	16,266.72	11,700.00	79.69	79.27	-69.72	4,605.84	139.90	346.43	195.44	151.00	2.294	Minor Risk	
16,450.00	11,820.00	16,316.72	11,700.00	80.31	79.89	-69.72	4,655.84	139.58	346.43	194.25	152.19	2.276	Minor Risk	
16,500.00	11,820.00	16,366.72	11,700.00	80.93	80.52	-69.72	4,705.84	139.27	346.43	193.05	153.38	2.259	Minor Risk	
16,550.00	11,820.00	16,416.72	11,700.00	81.56	81.15	-69.72	4,755.83	138.96	346.43	191.86	154.58	2.241	Minor Risk	
16,600.00	11,820.00	16,466.72	11,700.00	82.19	81.78	-69.72	4,805.83	138.64	346.43	190.66	155.78	2.224	Minor Risk	
16,650.00	11,820.00	16,516.72	11,700.00	82.81	82.41	-69.72	4,855.83	138.33	346.43	189.45	156.98	2.207	Minor Risk	
16,700.00	11,820.00	16,566.72	11,700.00	83.44	83.05	-69.72	4,905.83	138.02	346.43	188.24	158.19	2.190	Minor Risk	
16,750.00	11,820.00	16,616.72	11,700.00	84.07	83.68	-69.72	4,955.83	137.70	346.43	187.03	159.40	2.173	Minor Risk	
16,800.00	11,820.00	16,666.72	11,700.00	84.71	84.32	-69.72	5,005.83	137.39	346.43	185.82	160.61	2.157	Minor Risk	
16,850.00	11,820.00	16,716.72	11,700.00	85.34	84.96	-69.72	5,055.83	137.08	346.43	184.61	161.83	2.141	Minor Risk	
16,900.00	11,820.00	16,766.72	11,700.00	85.98	85.60	-69.72	5,105.83	136.76	346.43	183.39	163.05	2.125	Minor Risk	
16,950.00	11,820.00	16,816.72	11,700.00	86.61	86.24	-69.72	5,155.83	136.45	346.43	182.16	164.27	2.109	Minor Risk	
17,000.00	11,820.00	16,866.72	11,700.00	87.25	86.88	-69.72	5,205.83	136.13	346.43	180.94	165.49	2.093	Minor Risk	
17,050.00	11,820.00	16,916.72	11,700.00	87.89	87.52	-69.72	5,255.83	135.82	346.43	179.71	166.72	2.078	Minor Risk	
17,100.00	11,820.00	16,966.72	11,700.00	88.53	88.17	-69.72	5,305.82	135.51	346.43	178.48	167.95	2.063	Minor Risk	
17,150.00	11,820.00	17,016.72	11,700.00	89.18	88.81	-69.72	5,355.82	135.19	346.43	177.25	169.18	2.048	Minor Risk	
17,200.00	11,820.00	17,066.72	11,700.00	89.82	89.46	-69.72	5,405.82	134.88	346.43	176.02	170.41	2.033	Minor Risk	
17,250.00	11,820.00	17,116.72	11,700.00	90.47	90.11	-69.72	5,455.82	134.57	346.43	174.78	171.65	2.018	Minor Risk	
17,300.00	11,820.00	17,166.72	11,700.00	91.11	90.76	-69.72	5,505.82	134.25	346.43	173.54	172.89	2.004	Minor Risk	
17,350.00	11,820.00	17,216.72	11,700.00	91.76	91.41	-69.72	5,555.82	133.94	346.43	172.30	174.13	1.989	Minor Risk	
17,400.00	11,820.00	17,266.72	11,700.00	92.41	92.06	-69.72	5,605.82	133.63	346.43	171.06	175.38	1.975	Minor Risk	
17,450.00	11,820.00	17,316.72	11,700.00	93.06	92.72	-69.72	5,655.82	133.31	346.43	169.81	176.62	1.961	Minor Risk	
17,500.00	11,820.00	17,366.72	11,700.00	93.71	93.37	-69.72	5,705.82	133.00	346.43	168.56	177.87	1.948	Minor Risk	
17,550.00	11,820.00	17,416.72	11,700.00	94.36	94.03	-69.72	5,755.82	132.69	346.43	167.31	179.12	1.934	Minor Risk	
17,600.00	11,820.00	17,466.72	11,700.00	95.02	94.69	-69.72	5,805.81	132.37	346.43	166.06	180.37	1.921	Minor Risk	
17,650.00	11,820.00	17,516.72	11,700.00	95.67	95.34	-69.72	5,855.81	132.06	346.43	164.80	181.63	1.907	Minor Risk	
17,700.00	11,820.00	17,566.72	11,700.00	96.33	96.00	-69.72	5,905.81	131.75	346.43	163.55	182.89	1.894	Minor Risk	
17,750.00	11,820.00	17,616.72	11,700.00	96.98	96.66	-69.72	5,955.81	131.43	346.43	162.29	184.14	1.881	Minor Risk	
17,800.00	11,820.00	17,666.72	11,700.00	97.64	97.32	-69.72	6,005.81	131.12	346.43	161.03	185.41	1.869	Minor Risk	
17,850.00	11,820.00	17,716.72	11,700.00	98.30	97.98	-69.72	6,055.81	130.81	346.43	159.76	186.67	1.856	Minor Risk	
17,900.00	11,820.00	17,766.72	11,700.00	98.96	98.65	-69.72	6,105.81	130.49	346.43	158.50	187.93	1.843	Minor Risk	
17,950.00	11,820.00	17,816.72	11,700.00	99.62	99.31	-69.72	6,155.81	130.18	346.43	157.23	189.20	1.831	Minor Risk	
18,000.00	11,820.00	17,866.72	11,700.00	100.28	99.98	-69.72	6,205.81	129.87	346.43	155.96	190.47	1.819	Minor Risk	
18,050.00	11,820.00	17,916.72	11,700.00	100.95	100.64	-69.72	6,255.81	129.55	346.43	154.69	191.74	1.807	Minor Risk	
18,100.00	11,820.00	17,966.72	11,700.00	101.61	101.31	-69.72	6,305.80	129.24	346.43	153.42	193.01	1.795	Minor Risk	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference														
Offset														
Semi Major Axis														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
18,150.00	11,820.00	18,016.72	11,700.00	102.27	101.98	-69.72	6,355.80	128.92	346.43	152.15	194.28	1.783	Minor Risk	
18,200.00	11,820.00	18,066.72	11,700.00	102.94	102.64	-69.72	6,405.80	128.61	346.43	150.87	195.56	1.772	Minor Risk	
18,250.00	11,820.00	18,116.72	11,700.00	103.61	103.31	-69.72	6,455.80	128.30	346.43	149.60	196.83	1.760	Minor Risk	
18,300.00	11,820.00	18,166.72	11,700.00	104.27	103.98	-69.72	6,505.80	127.98	346.43	148.32	198.11	1.749	Minor Risk	
18,350.00	11,820.00	18,216.72	11,700.00	104.94	104.65	-69.72	6,555.80	127.67	346.43	147.04	199.39	1.737	Minor Risk	
18,400.00	11,820.00	18,266.72	11,700.00	105.61	105.32	-69.72	6,605.80	127.36	346.43	145.76	200.67	1.726	Minor Risk	
18,450.00	11,820.00	18,316.72	11,700.00	106.28	106.00	-69.72	6,655.80	127.04	346.43	144.48	201.95	1.715	Minor Risk	
18,500.00	11,820.00	18,366.72	11,700.00	106.95	106.67	-69.72	6,705.80	126.73	346.43	143.19	203.24	1.705	Minor Risk	
18,550.00	11,820.00	18,416.72	11,700.00	107.62	107.34	-69.72	6,755.80	126.42	346.43	141.91	204.52	1.694	Minor Risk	
18,600.00	11,820.00	18,466.72	11,700.00	108.29	108.02	-69.72	6,805.79	126.10	346.43	140.62	205.81	1.683	Minor Risk	
18,650.00	11,820.00	18,516.72	11,700.00	108.96	108.69	-69.72	6,855.79	125.79	346.43	139.33	207.10	1.673	Minor Risk	
18,700.00	11,820.00	18,566.72	11,700.00	109.64	109.37	-69.72	6,905.79	125.48	346.43	138.04	208.39	1.662	Minor Risk	
18,750.00	11,820.00	18,616.72	11,700.00	110.31	110.04	-69.72	6,955.79	125.16	346.43	136.75	209.68	1.652	Minor Risk	
18,800.00	11,820.00	18,666.72	11,700.00	110.98	110.72	-69.72	7,005.79	124.85	346.43	135.46	210.97	1.642	Minor Risk	
18,850.00	11,820.00	18,716.72	11,700.00	111.66	111.40	-69.72	7,055.79	124.54	346.43	134.16	212.26	1.632	Minor Risk	
18,900.00	11,820.00	18,766.72	11,700.00	112.34	112.08	-69.72	7,105.79	124.22	346.43	132.87	213.56	1.622	Minor Risk	
18,950.00	11,820.00	18,816.72	11,700.00	113.01	112.76	-69.72	7,155.79	123.91	346.43	131.57	214.86	1.612	Minor Risk	
19,000.00	11,820.00	18,866.72	11,700.00	113.69	113.44	-69.72	7,205.79	123.60	346.43	130.28	216.15	1.603	Minor Risk	
19,050.00	11,820.00	18,916.72	11,700.00	114.37	114.12	-69.72	7,255.79	123.28	346.43	128.98	217.45	1.593	Minor Risk	
19,100.00	11,820.00	18,966.72	11,700.00	115.05	114.80	-69.72	7,305.78	122.97	346.43	127.68	218.75	1.584	Minor Risk	
19,150.00	11,820.00	19,016.72	11,700.00	115.73	115.48	-69.72	7,355.78	122.65	346.43	126.38	220.05	1.574	Minor Risk	
19,200.00	11,820.00	19,066.72	11,700.00	116.40	116.16	-69.72	7,405.78	122.34	346.43	125.07	221.35	1.565	Minor Risk	
19,250.00	11,820.00	19,116.72	11,700.00	117.09	116.84	-69.72	7,455.78	122.03	346.43	123.77	222.66	1.556	Minor Risk	
19,300.00	11,820.00	19,166.72	11,700.00	117.77	117.52	-69.72	7,505.78	121.71	346.43	122.47	223.96	1.547	Minor Risk	
19,350.00	11,820.00	19,216.72	11,700.00	118.45	118.21	-69.72	7,555.78	121.40	346.43	121.16	225.27	1.538	Minor Risk	
19,400.00	11,820.00	19,266.72	11,700.00	119.13	118.89	-69.72	7,605.78	121.09	346.43	119.85	226.57	1.529	Minor Risk	
19,450.00	11,820.00	19,316.72	11,700.00	119.81	119.58	-69.72	7,655.78	120.77	346.43	118.55	227.88	1.520	Minor Risk	
19,500.00	11,820.00	19,366.72	11,700.00	120.49	120.26	-69.72	7,705.78	120.46	346.43	117.24	229.19	1.512	Minor Risk	
19,550.00	11,820.00	19,416.72	11,700.00	121.18	120.95	-69.72	7,755.78	120.15	346.43	115.93	230.50	1.503	Minor Risk	
19,600.00	11,820.00	19,466.72	11,700.00	121.86	121.63	-69.72	7,805.77	119.83	346.43	114.62	231.81	1.494	Major Risk	
19,650.00	11,820.00	19,516.72	11,700.00	122.55	122.32	-69.72	7,855.77	119.52	346.43	113.31	233.12	1.486	Major Risk	
19,700.00	11,820.00	19,566.72	11,700.00	123.23	123.01	-69.72	7,905.77	119.21	346.43	112.00	234.43	1.478	Major Risk	
19,750.00	11,820.00	19,616.72	11,700.00	123.92	123.70	-69.72	7,955.77	118.89	346.43	110.68	235.74	1.469	Major Risk	
19,800.00	11,820.00	19,666.72	11,700.00	124.60	124.38	-69.72	8,005.77	118.58	346.43	109.37	237.06	1.461	Major Risk	
19,850.00	11,820.00	19,716.72	11,700.00	125.29	125.07	-69.72	8,055.77	118.27	346.42	108.05	238.37	1.453	Major Risk	
19,900.00	11,820.00	19,766.72	11,700.00	125.98	125.76	-69.72	8,105.77	117.95	346.42	106.74	239.69	1.445	Major Risk	
19,950.00	11,820.00	19,816.72	11,700.00	126.67	126.45	-69.72	8,155.77	117.64	346.42	105.42	241.01	1.437	Major Risk	
20,000.00	11,820.00	19,866.72	11,700.00	127.35	127.14	-69.72	8,205.77	117.33	346.42	104.10	242.32	1.430	Major Risk	
20,050.00	11,820.00	19,916.72	11,700.00	128.04	127.83	-69.72	8,255.77	117.01	346.42	102.78	243.64	1.422	Major Risk	
20,100.00	11,820.00	19,966.72	11,700.00	128.73	128.52	-69.72	8,305.77	116.70	346.42	101.46	244.96	1.414	Major Risk	
20,150.00	11,820.00	20,016.72	11,700.00	129.42	129.21	-69.72	8,355.76	116.39	346.42	100.14	246.28	1.407	Major Risk	
20,200.00	11,820.00	20,066.72	11,700.00	130.11	129.91	-69.72	8,405.76	116.07	346.42	98.82	247.60	1.399	Major Risk	
20,250.00	11,820.00	20,116.72	11,700.00	130.80	130.60	-69.72	8,455.76	115.76	346.42	97.50	248.92	1.392	Major Risk	
20,300.00	11,820.00	20,166.72	11,700.00	131.49	131.29	-69.72	8,505.76	115.44	346.42	96.18	250.25	1.384	Major Risk	
20,350.00	11,820.00	20,216.72	11,700.00	132.18	131.98	-69.72	8,555.76	115.13	346.42	94.85	251.57	1.377	Major Risk	
20,400.00	11,820.00	20,266.72	11,700.00	132.87	132.68	-69.72	8,605.76	114.82	346.42	93.53	252.89	1.370	Major Risk	
20,450.00	11,820.00	20,316.72	11,700.00	133.57	133.37	-69.72	8,655.76	114.50	346.42	92.20	254.22	1.363	Major Risk	
20,500.00	11,820.00	20,366.72	11,700.00	134.26	134.06	-69.72	8,705.76	114.19	346.42	90.88	255.54	1.356	Major Risk	
20,550.00	11,820.00	20,416.72	11,700.00	134.95	134.76	-69.72	8,755.76	113.88	346.42	89.55	256.87	1.349	Major Risk	
20,600.00	11,820.00	20,466.72	11,700.00	135.64	135.45	-69.72	8,805.76	113.56	346.42	88.23	258.20	1.342	Major Risk	
20,650.00	11,820.00	20,516.72	11,700.00	136.34	136.15	-69.72	8,855.75	113.25	346.42	86.90	259.52	1.335	Major Risk	
20,700.00	11,820.00	20,566.72	11,700.00	137.03	136.84	-69.72	8,905.75	112.94	346.42	85.57	260.85	1.328	Major Risk	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1													Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
20,750.00	11,820.00	20,616.72	11,700.00	137.73	137.54	-69.72	8,955.75	112.62	346.42	84.24	262.18	1.321	Major Risk	
20,800.00	11,820.00	20,666.72	11,700.00	138.42	138.23	-69.72	9,005.75	112.31	346.42	82.91	263.51	1.315	Major Risk	
20,850.00	11,820.00	20,716.72	11,700.00	139.11	138.93	-69.72	9,055.75	112.00	346.42	81.58	264.84	1.308	Major Risk	
20,900.00	11,820.00	20,766.72	11,700.00	139.81	139.63	-69.72	9,105.75	111.68	346.42	80.25	266.17	1.301	Major Risk	
20,950.00	11,820.00	20,816.72	11,700.00	140.51	140.32	-69.72	9,155.75	111.37	346.42	78.92	267.51	1.295	Major Risk	
21,000.00	11,820.00	20,866.72	11,700.00	141.20	141.02	-69.72	9,205.75	111.06	346.42	77.58	268.84	1.289	Major Risk	
21,050.00	11,820.00	20,916.72	11,700.00	141.90	141.72	-69.72	9,255.75	110.74	346.42	76.25	270.17	1.282	Major Risk	
21,100.00	11,820.00	20,966.72	11,700.00	142.59	142.42	-69.72	9,305.75	110.43	346.42	74.92	271.50	1.276	Major Risk	
21,150.00	11,820.00	21,016.72	11,700.00	143.29	143.12	-69.72	9,355.74	110.12	346.42	73.58	272.84	1.270	Major Risk	
21,200.00	11,820.00	21,066.72	11,700.00	143.99	143.82	-69.72	9,405.74	109.80	346.42	72.25	274.17	1.264	Major Risk	
21,250.00	11,820.00	21,116.72	11,700.00	144.69	144.51	-69.72	9,455.74	109.49	346.42	70.91	275.51	1.257	Major Risk	
21,300.00	11,820.00	21,166.72	11,700.00	145.38	145.21	-69.72	9,505.74	109.17	346.42	69.58	276.84	1.251	Major Risk	
21,350.00	11,820.00	21,216.72	11,700.00	146.08	145.91	-69.72	9,555.74	108.86	346.42	68.24	278.18	1.245	Major Risk	
21,400.00	11,820.00	21,266.72	11,700.00	146.78	146.61	-69.72	9,605.74	108.55	346.42	66.90	279.52	1.239	Major Risk	
21,450.00	11,820.00	21,316.72	11,700.00	147.48	147.31	-69.72	9,655.74	108.23	346.42	65.57	280.85	1.233	Major Risk	
21,500.00	11,820.00	21,366.72	11,700.00	148.18	148.01	-69.72	9,705.74	107.92	346.42	64.23	282.19	1.228	Major Risk	
21,550.00	11,820.00	21,416.72	11,700.00	148.88	148.71	-69.72	9,755.74	107.61	346.42	62.89	283.53	1.222	Major Risk	
21,600.00	11,820.00	21,466.72	11,700.00	149.58	149.41	-69.72	9,805.74	107.29	346.42	61.55	284.87	1.216	Major Risk	
21,650.00	11,820.00	21,516.72	11,700.00	150.28	150.12	-69.72	9,855.73	106.98	346.42	60.21	286.21	1.210	Major Risk	
21,700.00	11,820.00	21,566.72	11,700.00	150.98	150.82	-69.72	9,905.73	106.67	346.42	58.87	287.55	1.205	Major Risk	
21,750.00	11,820.00	21,616.72	11,700.00	151.68	151.52	-69.72	9,955.73	106.35	346.42	57.53	288.89	1.199	Major Risk	
21,800.00	11,820.00	21,666.72	11,700.00	152.38	152.22	-69.72	10,005.73	106.04	346.42	56.19	290.23	1.194	Major Risk	
21,850.00	11,820.00	21,716.72	11,700.00	153.08	152.92	-69.72	10,055.73	105.73	346.42	54.84	291.57	1.188	Major Risk	
21,900.00	11,820.00	21,766.72	11,700.00	153.78	153.63	-69.72	10,105.73	105.41	346.42	53.50	292.92	1.183	Major Risk	
21,950.00	11,820.00	21,816.72	11,700.00	154.48	154.33	-69.72	10,155.73	105.10	346.42	52.16	294.26	1.177	Major Risk	
22,000.00	11,820.00	21,866.72	11,700.00	155.18	155.03	-69.72	10,205.73	104.79	346.42	50.82	295.60	1.172	Major Risk	
22,050.00	11,820.00	21,916.72	11,700.00	155.88	155.73	-69.72	10,255.73	104.47	346.42	49.47	296.95	1.167	Major Risk	
22,083.37	11,820.00	21,950.09	11,700.00	156.35	156.20	-69.71	10,289.09	104.26	346.42	48.58	297.84	1.163	Major Risk, SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan 1		Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft		
Reference		Offset		Semi Major Axis		Highside Toolface	Offset Wellbore Centre		Distance		Minimum Separation	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)						
0.00	0.00	0.40	0.40	0.50	0.50	89.67	0.35	59.98	59.98							
50.00	50.00	50.40	50.40	0.50	0.50	89.67	0.35	59.98	59.98	58.97	1.01	59.589				
100.00	100.00	100.40	100.40	0.52	0.52	89.67	0.35	59.98	59.98	58.95	1.04	57.903				
150.00	150.00	150.40	150.40	0.59	0.59	89.67	0.35	59.98	59.98	58.80	1.18	50.778				
200.00	200.00	200.40	200.40	0.70	0.70	89.67	0.35	59.98	59.98	58.58	1.41	42.685				
250.00	250.00	250.40	250.40	0.84	0.84	89.67	0.35	59.98	59.98	58.30	1.68	35.776				
300.00	300.00	300.40	300.40	0.99	0.99	89.67	0.35	59.98	59.98	58.01	1.98	30.356				
350.00	350.00	350.40	350.40	1.15	1.15	89.67	0.35	59.98	59.98	57.69	2.29	26.167				
400.00	400.00	400.40	400.40	1.31	1.31	89.67	0.35	59.98	59.98	57.36	2.62	22.898				
450.00	450.00	450.40	450.40	1.48	1.48	89.67	0.35	59.98	59.98	57.03	2.95	20.305				
500.00	500.00	500.40	500.40	1.65	1.65	89.67	0.35	59.98	59.98	56.69	3.29	18.212				
550.00	550.00	550.40	550.40	1.82	1.82	89.67	0.35	59.98	59.98	56.34	3.64	16.493				
600.00	600.00	600.40	600.40	1.99	1.99	89.67	0.35	59.98	59.98	56.00	3.98	15.061				
650.00	650.00	650.40	650.40	2.16	2.17	89.67	0.35	59.98	59.98	55.65	4.33	13.851				
700.00	700.00	700.40	700.40	2.34	2.34	89.67	0.35	59.98	59.98	55.30	4.68	12.816				
750.00	750.00	750.40	750.40	2.51	2.52	89.67	0.35	59.98	59.98	54.95	5.03	11.923				
800.00	800.00	800.40	800.40	2.69	2.69	89.67	0.35	59.98	59.98	54.60	5.38	11.144				
850.00	850.00	850.40	850.40	2.87	2.87	89.67	0.35	59.98	59.98	54.25	5.74	10.458				
900.00	900.00	900.40	900.40	3.04	3.04	89.67	0.35	59.98	59.98	53.89	6.09	9.852				
950.00	950.00	950.40	950.40	3.22	3.22	89.67	0.35	59.98	59.98	53.54	6.44	9.310				
1,000.00	1,000.00	1,000.40	1,000.40	3.40	3.40	89.67	0.35	59.98	59.98	53.18	6.80	8.825				
1,050.00	1,050.00	1,050.40	1,050.40	3.58	3.58	89.67	0.35	59.98	59.98	52.83	7.15	8.387				
1,100.00	1,100.00	1,100.40	1,100.40	3.75	3.75	89.67	0.35	59.98	59.98	52.47	7.51	7.990				
1,150.00	1,150.00	1,150.40	1,150.40	3.93	3.93	89.67	0.35	59.98	59.98	52.12	7.86	7.629				
1,200.00	1,200.00	1,200.40	1,200.40	4.11	4.11	89.67	0.35	59.98	59.98	51.76	8.22	7.299				
1,250.00	1,250.00	1,250.40	1,250.40	4.29	4.29	89.67	0.35	59.98	59.98	51.41	8.57	6.996				
1,300.00	1,300.00	1,300.40	1,300.40	4.46	4.47	89.67	0.35	59.98	59.98	51.05	8.93	6.717				
1,350.00	1,350.00	1,350.40	1,350.40	4.64	4.64	89.67	0.35	59.98	59.98	50.70	9.29	6.459				
1,400.00	1,400.00	1,400.40	1,400.40	4.82	4.82	89.67	0.35	59.98	59.98	50.34	9.64	6.220				
1,450.00	1,450.00	1,450.40	1,450.40	5.00	5.00	89.67	0.35	59.98	59.98	49.98	10.00	5.999				
1,500.00	1,500.00	1,500.40	1,500.40	5.18	5.18	89.67	0.35	59.98	59.98	49.63	10.36	5.792				
1,550.00	1,550.00	1,550.40	1,550.40	5.36	5.36	89.67	0.35	59.98	59.98	49.27	10.71	5.599				
1,600.00	1,600.00	1,600.40	1,600.40	5.53	5.54	89.67	0.35	59.98	59.98	48.91	11.07	5.419				
1,650.00	1,650.00	1,650.40	1,650.40	5.71	5.71	89.67	0.35	59.98	59.98	48.55	11.43	5.249				
1,700.00	1,700.00	1,700.40	1,700.40	5.89	5.89	89.67	0.35	59.98	59.98	48.20	11.78	5.090				
1,750.00	1,750.00	1,750.40	1,750.40	6.07	6.07	89.67	0.35	59.98	59.98	47.84	12.14	4.940 Alert				
1,800.00	1,800.00	1,800.40	1,800.40	6.25	6.25	89.67	0.35	59.98	59.98	47.48	12.50	4.799 Alert				
1,850.00	1,850.00	1,850.40	1,850.40	6.43	6.43	89.67	0.35	59.98	59.98	47.13	12.86	4.666 Alert				
1,900.00	1,900.00	1,900.40	1,900.40	6.61	6.61	89.67	0.35	59.98	59.98	46.77	13.21	4.540 Alert				
1,950.00	1,950.00	1,950.40	1,950.40	6.78	6.79	89.67	0.35	59.98	59.98	46.41	13.57	4.420 Alert				
2,000.00	2,000.00	2,000.40	2,000.40	6.96	6.96	89.67	0.35	59.98	59.98	46.05	13.93	4.306 Alert, CC				
2,050.00	2,050.00	2,049.88	2,049.88	7.14	7.14	89.70	0.32	60.19	60.20	45.92	14.28	4.216 Alert, ES				
2,100.00	2,100.00	2,099.36	2,099.36	7.32	7.31	89.79	0.22	60.83	60.84	46.21	14.63	4.159 Alert				
2,150.00	2,150.00	2,148.83	2,148.81	7.50	7.48	89.94	0.07	61.89	61.91	46.94	14.97	4.135 Alert				
2,200.00	2,200.00	2,198.27	2,198.23	7.68	7.64	90.14	-0.15	63.37	63.41	48.10	15.31	4.141 Alert				
2,250.00	2,250.00	2,247.68	2,247.60	7.86	7.81	90.38	-0.43	65.28	65.34	49.68	15.66	4.173 Alert				
2,300.00	2,300.00	2,297.06	2,296.92	8.04	7.98	90.66	-0.78	67.60	67.69	51.69	16.00	4.231 Alert				
2,350.00	2,350.00	2,346.39	2,346.18	8.22	8.15	90.96	-1.18	70.34	70.47	54.13	16.34	4.313 Alert				
2,400.00	2,400.00	2,395.67	2,395.35	8.39	8.32	91.28	-1.65	73.49	73.68	57.00	16.68	4.418 Alert				
2,450.00	2,450.00	2,444.89	2,444.44	8.57	8.49	91.62	-2.17	77.06	77.32	60.30	17.02	4.544 Alert				
2,500.00	2,500.00	2,494.05	2,493.44	8.75	8.66	91.95	-2.76	81.04	81.38	64.03	17.35	4.690 Alert				
2,550.00	2,550.00	2,543.13	2,542.32	8.93	8.83	92.29	-3.41	85.43	85.88	68.19	17.69	4.854 Alert				

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)			
2,600.00	2,600.00	2,592.13	2,591.08	9.11	9.01	92.61	-4.12	90.22	90.80	72.77	18.03	5.037				
2,650.00	2,650.00	2,641.65	2,640.32	9.29	9.18	92.93	-4.88	95.37	96.03	77.65	18.37	5.227				
2,700.00	2,700.00	2,708.63	2,689.77	9.47	9.42	93.21	-5.64	100.56	101.27	82.49	18.78	5.392				
2,750.00	2,750.00	2,741.09	2,739.21	9.65	9.53	93.47	-6.41	105.74	106.52	87.45	19.07	5.585				
2,800.00	2,800.00	2,809.16	2,788.68	9.82	9.78	-18.32	-7.18	110.93	111.57	92.09	19.48	5.727				
2,850.00	2,849.99	2,840.62	2,838.19	9.99	9.89	-18.19	-7.94	116.12	116.20	96.45	19.76	5.882				
2,900.00	2,899.98	2,909.56	2,887.73	10.15	10.14	-18.14	-8.71	121.31	120.43	100.26	20.16	5.973				
2,950.00	2,949.96	2,940.30	2,937.31	10.32	10.25	-18.15	-9.48	126.51	124.23	103.80	20.44	6.079				
3,000.00	2,999.92	3,009.82	2,986.91	10.49	10.50	-18.23	-10.25	131.71	127.63	106.78	20.85	6.122				
3,050.00	3,049.86	3,040.09	3,036.54	10.66	10.61	-18.36	-11.02	136.92	130.61	109.49	21.12	6.184				
3,100.00	3,099.78	3,090.02	3,086.20	10.83	10.79	-18.55	-11.78	142.12	133.18	111.72	21.46	6.205				
3,150.00	3,149.68	3,139.97	3,135.87	11.00	10.97	-18.79	-12.55	147.33	135.35	113.54	21.81	6.206				
3,200.00	3,199.56	3,189.93	3,185.55	11.17	11.15	-19.04	-13.32	152.54	137.38	115.23	22.15	6.201				
3,250.00	3,249.44	3,239.88	3,235.22	11.34	11.33	-19.29	-14.09	157.75	139.42	116.92	22.50	6.196				
3,300.00	3,299.33	3,289.84	3,284.90	11.51	11.52	-19.54	-14.86	162.96	141.46	118.61	22.85	6.192				
3,350.00	3,349.21	3,339.79	3,334.58	11.68	11.70	-19.77	-15.63	168.17	143.50	120.30	23.19	6.187				
3,400.00	3,399.10	3,389.75	3,384.25	11.86	11.88	-20.00	-16.40	173.38	145.54	122.00	23.54	6.182				
3,450.00	3,448.98	3,439.70	3,433.93	12.03	12.07	-20.23	-17.17	178.59	147.59	123.70	23.89	6.178				
3,500.00	3,498.86	3,489.66	3,483.61	12.20	12.25	-20.44	-17.94	183.80	149.63	125.40	24.24	6.173				
3,550.00	3,548.75	3,539.61	3,533.28	12.38	12.44	-20.65	-18.71	189.00	151.68	127.10	24.59	6.169				
3,600.00	3,598.63	3,589.57	3,582.96	12.55	12.62	-20.86	-19.48	194.21	153.74	128.80	24.94	6.165				
3,650.00	3,648.52	3,639.52	3,632.64	12.72	12.80	-21.06	-20.25	199.42	155.79	130.50	25.29	6.161				
3,700.00	3,698.40	3,689.48	3,682.31	12.90	12.99	-21.25	-21.02	204.63	157.84	132.21	25.64	6.157				
3,750.00	3,748.28	3,739.43	3,731.99	13.07	13.17	-21.44	-21.79	209.84	159.90	133.91	25.99	6.153				
3,800.00	3,798.17	3,789.39	3,781.67	13.25	13.36	-21.63	-22.56	215.05	161.96	135.62	26.34	6.149				
3,850.00	3,848.05	3,839.34	3,831.34	13.42	13.55	-21.81	-23.33	220.26	164.02	137.33	26.69	6.145				
3,900.00	3,897.93	3,889.30	3,881.02	13.60	13.73	-21.98	-24.10	225.47	166.08	139.04	27.04	6.141				
3,950.00	3,947.82	3,939.25	3,930.70	13.77	13.92	-22.16	-24.87	230.68	168.15	140.75	27.40	6.137				
4,000.00	3,997.70	3,989.21	3,980.37	13.95	14.10	-22.32	-25.64	235.89	170.21	142.46	27.75	6.134				
4,050.00	4,047.59	4,039.16	4,030.05	14.13	14.29	-22.49	-26.41	241.09	172.28	144.18	28.10	6.130				
4,100.00	4,097.47	4,089.12	4,079.72	14.30	14.48	-22.65	-27.18	246.30	174.35	145.89	28.46	6.127				
4,150.00	4,147.35	4,139.07	4,129.40	14.48	14.67	-22.80	-27.94	251.51	176.42	147.61	28.81	6.123				
4,200.00	4,197.24	4,189.03	4,179.08	14.66	14.85	-22.95	-28.71	256.72	178.49	149.32	29.17	6.120				
4,250.00	4,247.12	4,238.98	4,228.75	14.83	15.04	-23.10	-29.48	261.93	180.56	151.04	29.52	6.116				
4,300.00	4,297.01	4,288.94	4,278.43	15.01	15.23	-23.25	-30.25	267.14	182.63	152.76	29.88	6.113				
4,350.00	4,346.89	4,338.89	4,328.11	15.19	15.41	-23.39	-31.02	272.35	184.71	154.48	30.23	6.110				
4,400.00	4,396.77	4,388.85	4,377.78	15.37	15.60	-23.53	-31.79	277.56	186.78	156.20	30.59	6.107				
4,450.00	4,446.66	4,438.80	4,427.46	15.55	15.79	-23.66	-32.56	282.77	188.86	157.92	30.94	6.104				
4,500.00	4,496.54	4,488.76	4,477.14	15.72	15.98	-23.80	-33.33	287.98	190.94	159.64	31.30	6.101				
4,550.00	4,546.43	4,538.71	4,526.81	15.90	16.17	-23.93	-34.10	293.18	193.02	161.36	31.65	6.098				
4,600.00	4,596.31	4,588.66	4,576.49	16.08	16.35	-24.05	-34.87	298.39	195.10	163.09	32.01	6.095				
4,650.00	4,646.19	4,638.62	4,626.17	16.26	16.54	-24.18	-35.64	303.60	197.18	164.81	32.37	6.092				
4,700.00	4,696.08	4,688.57	4,675.84	16.44	16.73	-24.30	-36.41	308.81	199.26	166.53	32.72	6.089				
4,750.00	4,745.96	4,738.53	4,725.52	16.62	16.92	-24.42	-37.18	314.02	201.34	168.26	33.08	6.086				
4,800.00	4,795.85	4,788.48	4,775.20	16.80	17.11	-24.54	-37.95	319.23	203.42	169.98	33.44	6.083				
4,850.00	4,845.73	4,838.44	4,824.87	16.98	17.30	-24.65	-38.72	324.44	205.51	171.71	33.80	6.081				
4,900.00	4,895.61	4,888.39	4,874.55	17.15	17.49	-24.76	-39.49	329.65	207.59	173.44	34.15	6.078				
4,950.00	4,945.50	4,938.35	4,924.23	17.33	17.68	-24.87	-40.26	334.86	209.68	175.16	34.51	6.075				
5,000.00	4,995.38	4,988.30	4,973.90	17.51	17.86	-24.98	-41.03	340.07	211.76	176.89	34.87	6.073				
5,050.00	5,045.27	5,038.26	5,023.58	17.69	18.05	-25.09	-41.80	345.27	213.85	178.62	35.23	6.070				
5,100.00	5,095.15	5,088.21	5,073.26	17.87	18.24	-25.19	-42.57	350.48	215.94	180.35	35.59	6.068				
5,150.00	5,145.03	5,138.17	5,122.93	18.05	18.43	-25.29	-43.33	355.69	218.03	182.08	35.95	6.065				

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-23S-R31E - Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis		Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
5,200.00	5,194.92	5,188.12	5,172.61	18.23	18.62	-25.39	-44.10	360.90	220.12	183.81	36.31	6.063				
5,250.00	5,244.80	5,238.08	5,222.29	18.41	18.81	-25.49	-44.87	366.11	222.21	185.54	36.66	6.060				
5,300.00	5,294.68	5,288.03	5,271.96	18.59	19.00	-25.59	-45.64	371.32	224.30	187.27	37.02	6.058				
5,350.00	5,344.57	5,337.99	5,321.64	18.77	19.19	-25.68	-46.41	376.53	226.39	189.00	37.38	6.056				
5,400.00	5,394.45	5,387.94	5,371.32	18.95	19.38	-25.77	-47.18	381.74	228.48	190.74	37.74	6.054				
5,450.00	5,444.34	5,437.90	5,420.99	19.14	19.57	-25.86	-47.95	386.95	230.57	192.47	38.10	6.051				
5,500.00	5,494.22	5,487.85	5,470.67	19.32	19.76	-25.95	-48.72	392.16	232.66	194.20	38.46	6.049				
5,550.00	5,544.10	5,537.81	5,520.35	19.50	19.95	-26.04	-49.49	397.36	234.76	195.93	38.82	6.047				
5,600.00	5,593.99	5,587.76	5,570.02	19.68	20.14	-26.13	-50.26	402.57	236.85	197.67	39.18	6.045				
5,650.00	5,643.87	5,637.72	5,619.70	19.86	20.33	-26.21	-51.03	407.78	238.95	199.40	39.54	6.043				
5,700.00	5,693.76	5,687.67	5,669.38	20.04	20.52	-26.30	-51.80	412.99	241.04	201.14	39.90	6.041				
5,750.00	5,743.64	5,737.63	5,719.05	20.22	20.71	-26.38	-52.57	418.20	243.14	202.87	40.26	6.039				
5,800.00	5,793.52	5,787.58	5,768.73	20.40	20.90	-26.46	-53.34	423.41	245.23	204.61	40.62	6.036				
5,850.00	5,843.41	5,837.54	5,818.41	20.58	21.09	-26.54	-54.11	428.62	247.33	206.34	40.99	6.034				
5,900.00	5,893.29	5,887.49	5,868.08	20.76	21.28	-26.61	-54.88	433.83	249.42	208.08	41.35	6.033				
5,950.00	5,943.18	5,937.45	5,917.76	20.95	21.47	-26.69	-55.65	439.04	251.52	209.81	41.71	6.031				
6,000.00	5,993.06	5,987.40	5,967.44	21.13	21.66	-26.77	-56.42	444.24	253.62	211.55	42.07	6.029				
6,050.00	6,042.94	6,037.36	6,017.11	21.31	21.85	-26.84	-57.19	449.45	255.72	213.29	42.43	6.027				
6,100.00	6,092.83	6,087.31	6,066.79	21.49	22.04	-26.91	-57.96	454.66	257.82	215.02	42.79	6.025				
6,150.00	6,142.71	6,137.27	6,116.47	21.67	22.24	-26.98	-58.72	459.87	259.91	216.76	43.15	6.023				
6,200.00	6,192.60	6,187.22	6,166.14	21.85	22.43	-27.05	-59.49	465.08	262.01	218.50	43.51	6.021				
6,250.00	6,242.48	6,237.18	6,215.82	22.04	22.62	-27.12	-60.26	470.29	264.11	220.24	43.88	6.020				
6,300.00	6,292.36	6,287.13	6,265.50	22.22	22.81	-27.19	-61.03	475.50	266.21	221.98	44.24	6.018				
6,350.00	6,342.25	6,337.09	6,315.17	22.40	23.00	-27.26	-61.80	480.71	268.31	223.71	44.60	6.016				
6,400.00	6,392.13	6,387.04	6,364.85	22.58	23.19	-27.32	-62.57	485.92	270.42	225.45	44.96	6.014				
6,450.00	6,442.02	6,437.00	6,414.53	22.76	23.38	-27.39	-63.34	491.13	272.52	227.19	45.32	6.013				
6,500.00	6,491.90	6,486.95	6,464.20	22.95	23.57	-27.45	-64.11	496.33	274.62	228.93	45.69	6.011				
6,550.00	6,541.78	6,536.91	6,513.88	23.13	23.76	-27.52	-64.88	501.54	276.72	230.67	46.05	6.009				
6,600.00	6,591.67	6,586.86	6,563.56	23.31	23.95	-27.58	-65.65	506.75	278.82	232.41	46.41	6.008				
6,650.00	6,641.55	6,636.82	6,613.23	23.49	24.14	-27.64	-66.42	511.96	280.92	234.15	46.77	6.006				
6,700.00	6,691.43	6,686.77	6,662.91	23.68	24.34	-27.70	-67.19	517.17	283.03	235.89	47.13	6.005				
6,750.00	6,741.32	6,736.72	6,712.58	23.86	24.53	-27.76	-67.96	522.38	285.13	237.63	47.50	6.003				
6,800.00	6,791.20	6,786.68	6,762.26	24.04	24.72	-27.82	-68.73	527.59	287.23	239.37	47.86	6.002				
6,850.00	6,841.09	6,836.63	6,811.94	24.22	24.91	-27.88	-69.50	532.80	289.34	241.11	48.22	6.000				
6,900.00	6,890.97	6,886.59	6,861.61	24.41	25.10	-27.93	-70.27	538.01	291.44	242.86	48.59	5.999				
6,950.00	6,940.85	6,936.54	6,911.29	24.59	25.29	-27.99	-71.04	543.22	293.55	244.60	48.95	5.997				
7,000.00	6,990.74	6,986.50	6,960.97	24.77	25.48	-28.04	-71.81	548.42	295.65	246.34	49.31	5.996				
7,050.00	7,040.62	7,036.45	7,010.64	24.95	25.67	-28.10	-72.58	553.63	297.76	248.08	49.67	5.994				
7,100.00	7,090.51	7,086.41	7,060.32	25.14	25.87	-28.15	-73.35	558.84	299.86	249.82	50.04	5.993				
7,150.00	7,140.39	7,136.36	7,110.00	25.32	26.06	-28.20	-74.12	564.05	301.97	251.57	50.40	5.991				
7,200.00	7,190.27	7,186.32	7,159.67	25.50	26.25	-28.26	-74.88	569.26	304.07	253.31	50.76	5.990				
7,250.00	7,240.16	7,236.27	7,209.35	25.68	26.44	-28.31	-75.65	574.47	306.18	255.05	51.13	5.989				
7,300.00	7,290.04	7,286.23	7,259.03	25.87	26.63	-28.36	-76.42	579.68	308.28	256.79	51.49	5.987				
7,350.00	7,339.93	7,336.18	7,308.70	26.05	26.82	-28.41	-77.19	584.89	310.39	258.54	51.85	5.986				
7,400.00	7,389.81	7,386.14	7,358.38	26.23	27.02	-28.46	-77.96	590.10	312.50	260.28	52.22	5.985				
7,450.00	7,439.69	7,436.09	7,408.06	26.42	27.21	-28.51	-78.73	595.31	314.60	262.02	52.58	5.983				
7,500.00	7,489.58	7,486.05	7,457.73	26.60	27.40	-28.55	-79.50	600.51	316.71	263.77	52.94	5.982				
7,550.00	7,539.46	7,536.00	7,507.41	26.78	27.59	-28.60	-80.27	605.72	318.82	265.51	53.31	5.981				
7,600.00	7,589.35	7,585.96	7,557.09	26.96	27.78	-28.65	-81.04	610.93	320.92	267.25	53.67	5.979				
7,650.00	7,639.23	7,635.91	7,606.76	27.15	27.97	-28.69	-81.81	616.14	323.03	269.00	54.04	5.978				
7,700.00	7,689.11	7,685.87	7,656.44	27.33	28.17	-28.74	-82.58	621.35	325.14	270.74	54.40	5.977				
7,750.00	7,739.00	7,735.82	7,706.12	27.51	28.36	-28.79	-83.35	626.56	327.25	272.49	54.76	5.976				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan 1		Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM															Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Distance								Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
7,800.00	7,788.88	7,785.78	7,755.79	27.70	28.55	-28.83	-84.12	631.77	329.36	274.23	55.13	5.975				
7,850.00	7,838.76	7,835.73	7,805.47	27.88	28.74	-28.87	-84.89	636.98	331.47	275.97	55.49	5.973				
7,900.00	7,888.65	7,885.69	7,855.15	28.06	28.93	-28.92	-85.66	642.19	333.57	277.72	55.85	5.972				
7,950.00	7,938.53	7,935.64	7,904.82	28.25	29.12	-28.96	-86.43	647.39	335.68	279.46	56.22	5.971				
8,000.00	7,988.42	7,985.60	7,954.50	28.43	29.32	-29.00	-87.20	652.60	337.79	281.21	56.58	5.970				
8,050.00	8,038.30	8,035.55	8,004.18	28.61	29.51	-29.04	-87.97	657.81	339.90	282.95	56.95	5.969				
8,100.00	8,088.18	8,085.51	8,053.85	28.80	29.70	-29.09	-88.74	663.02	342.01	284.70	57.31	5.968				
8,150.00	8,138.07	8,135.46	8,103.53	28.98	29.89	-29.13	-89.51	668.23	344.12	286.44	57.68	5.967				
8,200.00	8,187.95	8,185.42	8,153.21	29.16	30.08	-29.17	-90.27	673.44	346.23	288.19	58.04	5.965				
8,250.00	8,237.84	8,235.37	8,202.88	29.35	30.28	-29.21	-91.04	678.65	348.34	289.94	58.40	5.964				
8,300.00	8,287.72	8,285.33	8,252.56	29.53	30.47	-29.24	-91.81	683.86	350.45	291.68	58.77	5.963				
8,350.00	8,337.60	8,335.28	8,302.24	29.71	30.66	-29.28	-92.58	689.07	352.56	293.43	59.13	5.962				
8,400.00	8,387.49	8,385.24	8,351.91	29.90	30.85	-29.32	-93.35	694.28	354.67	295.17	59.50	5.961				
8,450.00	8,437.37	8,435.19	8,401.59	30.08	31.04	-29.36	-94.12	699.48	356.78	296.92	59.86	5.960				
8,500.00	8,487.26	8,485.15	8,451.27	30.27	31.24	-29.40	-94.89	704.69	358.89	298.67	60.23	5.959				
8,550.00	8,537.14	8,535.10	8,500.94	30.45	31.43	-29.43	-95.66	709.90	361.00	300.41	60.59	5.958				
8,600.00	8,587.02	8,585.06	8,550.62	30.63	31.62	-29.47	-96.43	715.11	363.11	302.16	60.96	5.957				
8,650.00	8,636.91	8,635.01	8,600.30	30.82	31.81	-29.51	-97.20	720.32	365.22	303.90	61.32	5.956				
8,700.00	8,686.79	8,684.97	8,649.97	31.00	32.01	-29.54	-97.97	725.53	367.34	305.65	61.68	5.955				
8,750.00	8,736.68	8,734.92	8,699.65	31.18	32.20	-29.58	-98.74	730.74	369.45	307.40	62.05	5.954				
8,800.00	8,786.56	8,784.88	8,749.33	31.37	32.39	-29.61	-99.51	735.95	371.56	309.15	62.41	5.953				
8,850.00	8,836.44	8,834.83	8,799.00	31.55	32.58	-29.65	-100.28	741.16	373.67	310.89	62.78	5.952				
8,900.00	8,886.33	8,884.78	8,848.68	31.73	32.77	-29.68	-101.05	746.37	375.78	312.64	63.14	5.951				
8,950.00	8,936.21	8,934.74	8,898.36	31.92	32.97	-29.72	-101.82	751.57	377.89	314.39	63.51	5.950				
9,000.00	8,986.10	8,984.69	8,948.03	32.10	33.16	-29.75	-102.59	756.78	380.01	316.13	63.87	5.949				
9,050.00	9,035.98	9,034.65	8,997.71	32.29	33.35	-29.78	-103.36	761.99	382.12	317.88	64.24	5.948				
9,100.00	9,085.86	9,084.60	9,047.39	32.47	33.54	-29.81	-104.13	767.20	384.23	319.63	64.60	5.948				
9,150.00	9,135.75	9,134.56	9,097.06	32.65	33.74	-29.85	-104.90	772.41	386.34	321.38	64.97	5.947				
9,200.00	9,185.63	9,184.51	9,146.74	32.84	33.93	-29.88	-105.66	777.62	388.46	323.12	65.33	5.946				
9,250.00	9,235.51	9,234.47	9,196.41	33.02	34.12	-29.91	-106.43	782.83	390.57	324.87	65.70	5.945				
9,300.00	9,285.40	9,284.42	9,246.09	33.21	34.31	-29.94	-107.20	788.04	392.68	326.62	66.06	5.944				
9,350.00	9,335.28	9,334.38	9,295.77	33.39	34.50	-29.97	-107.97	793.25	394.80	328.37	66.43	5.943				
9,400.00	9,385.17	9,384.33	9,345.44	33.57	34.70	-30.00	-108.74	798.46	396.91	330.11	66.79	5.942				
9,450.00	9,435.05	9,434.29	9,395.12	33.76	34.89	-30.03	-109.51	803.66	399.02	331.86	67.16	5.941				
9,500.00	9,484.93	9,484.24	9,444.80	33.94	35.08	-30.06	-110.28	808.87	401.13	333.61	67.52	5.941				
9,550.00	9,534.82	9,534.20	9,494.47	34.13	35.27	-30.09	-111.05	814.08	403.25	335.36	67.89	5.940				
9,600.00	9,584.70	9,584.15	9,544.15	34.31	35.47	-30.12	-111.82	819.29	405.36	337.11	68.25	5.939				
9,650.00	9,634.59	9,634.11	9,593.83	34.49	35.66	-30.15	-112.59	824.50	407.48	338.86	68.62	5.938				
9,700.00	9,684.47	9,684.06	9,643.50	34.68	35.85	-30.18	-113.36	829.71	409.59	340.60	68.99	5.937				
9,750.00	9,734.35	9,734.02	9,693.18	34.86	36.04	-30.21	-114.13	834.92	411.70	342.35	69.35	5.937				
9,800.00	9,784.24	9,783.97	9,742.86	35.05	36.24	-30.24	-114.90	840.13	413.82	344.10	69.72	5.936				
9,850.00	9,834.12	9,833.93	9,792.53	35.23	36.43	-30.26	-115.67	845.34	415.93	345.85	70.08	5.935				
9,900.00	9,884.01	9,883.88	9,842.21	35.41	36.62	-30.29	-116.44	850.55	418.04	347.60	70.45	5.934				
9,950.00	9,933.89	9,933.84	9,891.89	35.60	36.81	-30.32	-117.21	855.75	420.16	349.35	70.81	5.933				
10,000.00	9,983.77	9,983.79	9,941.56	35.78	37.01	-30.35	-117.98	860.96	422.27	351.10	71.18	5.933				
10,050.00	10,033.66	10,033.75	9,991.24	35.97	37.20	-30.37	-118.75	866.17	424.39	352.84	71.54	5.932				
10,100.00	10,083.54	10,083.70	10,040.92	36.15	37.39	-30.40	-119.52	871.38	426.50	354.59	71.91	5.931				
10,150.00	10,133.43	10,133.66	10,090.59	36.34	37.58	-30.42	-120.29	876.59	428.62	356.34	72.27	5.930				
10,200.00	10,183.31	10,183.61	10,140.27	36.52	37.78	-30.45	-121.06	881.80	430.73	358.09	72.64	5.930				
10,250.00	10,233.19	10,233.57	10,189.95	36.70	37.97	-30.48	-121.82	887.01	432.85	359.84	73.01	5.929				
10,300.00	10,283.08	10,283.52	10,239.62	36.89	38.16	-30.50	-122.59	892.22	434.96	361.59	73.37	5.928				
10,350.00	10,332.96	10,333.48	10,289.30	37.07	38.35	-30.53	-123.36	897.43	437.08	363.34	73.74	5.927				

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)						
10,400.00	10,382.85	10,383.43	10,338.98	37.26	38.55	-30.55	-124.13	902.63	439.19	365.09	74.10	5.927				
10,450.00	10,432.73	10,433.39	10,388.65	37.44	38.74	-30.58	-124.90	907.84	441.31	366.84	74.47	5.926				
10,500.00	10,482.61	10,483.34	10,438.33	37.62	38.93	-30.60	-125.67	913.05	443.42	368.59	74.83	5.925				
10,550.00	10,532.50	10,533.30	10,488.01	37.81	39.12	-30.63	-126.44	918.26	445.54	370.34	75.20	5.925				
10,600.00	10,582.38	10,588.74	10,543.17	37.99	39.34	-30.66	-127.25	923.73	447.38	371.78	75.61	5.917				
10,650.00	10,632.26	10,645.03	10,599.26	38.18	39.55	-30.73	-127.95	928.48	448.54	372.52	76.01	5.901				
10,700.00	10,682.17	10,701.35	10,655.43	38.36	39.76	-30.82	-128.53	932.42	449.21	372.81	76.41	5.879				
10,750.00	10,732.10	10,757.67	10,711.67	38.54	39.96	-30.89	-128.99	935.53	449.75	372.96	76.79	5.857				
10,800.00	10,782.07	10,814.00	10,767.95	38.72	40.16	-30.94	-129.33	937.82	450.14	372.99	77.16	5.834				
10,850.00	10,832.06	10,870.34	10,824.27	38.90	40.36	-30.97	-129.55	939.30	450.39	372.88	77.51	5.811				
10,900.00	10,882.05	10,926.68	10,880.61	39.08	40.55	-30.98	-129.64	939.95	450.50	372.65	77.85	5.787				
10,950.00	10,932.05	10,978.53	10,932.45	39.25	40.72	81.02	-129.65	939.98	450.51	372.32	78.19	5.762				
11,000.00	10,982.05	11,028.53	10,982.45	39.42	40.89	81.02	-129.65	939.98	450.51	371.98	78.52	5.737				
11,050.00	11,032.05	11,078.53	11,032.45	39.59	41.05	81.02	-129.65	939.98	450.51	371.64	78.86	5.713				
11,100.00	11,082.05	11,128.53	11,082.45	39.76	41.22	81.02	-129.65	939.98	450.51	371.30	79.20	5.688				
11,150.00	11,132.05	11,178.53	11,132.45	39.92	41.38	81.02	-129.65	939.98	450.51	370.97	79.54	5.664				
11,200.00	11,182.05	11,228.53	11,182.45	40.09	41.55	81.02	-129.65	939.98	450.51	370.63	79.88	5.640				
11,250.00	11,232.05	11,278.53	11,232.45	40.26	41.71	81.02	-129.65	939.98	450.51	370.29	80.22	5.616				
11,300.00	11,282.03	11,318.22	11,272.13	40.43	41.85	81.38	-129.12	940.19	450.75	370.17	80.58	5.594				
11,350.00	11,331.74	11,350.00	11,303.83	40.60	41.95	81.41	-126.95	941.04	451.94	371.07	80.87	5.589				
11,400.00	11,380.81	11,389.07	11,342.52	40.76	42.09	81.53	-121.97	943.01	454.05	372.93	81.12	5.597				
11,450.00	11,428.85	11,424.47	11,377.18	40.91	42.21	81.67	-115.29	945.64	457.15	375.85	81.31	5.623				
11,500.00	11,475.52	11,459.84	11,411.28	41.05	42.33	81.83	-106.59	949.07	461.23	379.78	81.45	5.663				
11,550.00	11,520.44	11,495.19	11,444.70	41.18	42.44	82.03	-95.89	953.28	466.28	384.73	81.56	5.717				
11,600.00	11,563.29	11,530.50	11,477.30	41.30	42.56	82.24	-83.25	958.26	472.33	390.67	81.65	5.784				
11,650.00	11,603.72	11,565.80	11,508.95	41.41	42.67	82.46	-68.73	963.98	479.36	397.60	81.76	5.863				
11,700.00	11,641.45	11,600.00	11,538.61	41.50	42.77	82.64	-52.90	970.22	487.38	405.51	81.87	5.953				
11,750.00	11,676.17	11,636.41	11,568.97	41.58	42.88	82.89	-34.23	977.58	496.37	414.32	82.05	6.050				
11,800.00	11,707.62	11,671.75	11,597.14	41.65	42.98	83.08	-14.36	985.40	506.35	424.09	82.25	6.156				
11,850.00	11,735.57	11,707.18	11,623.95	41.71	43.08	83.25	7.17	993.89	517.27	434.76	82.51	6.270				
11,900.00	11,759.81	11,744.12	11,650.28	41.75	43.18	83.45	31.27	1,003.38	529.11	446.29	82.82	6.389				
11,950.00	11,780.14	11,803.95	11,689.46	41.79	43.33	84.46	73.93	1,018.25	540.74	457.34	83.40	6.484				
12,000.00	11,796.41	11,867.35	11,726.07	41.84	43.47	85.51	123.77	1,032.08	551.09	467.20	83.89	6.569				
12,050.00	11,808.50	11,934.47	11,758.81	41.94	43.59	86.59	181.01	1,044.37	559.93	475.64	84.29	6.643				
12,100.00	11,816.32	12,005.31	11,786.14	42.05	43.72	87.67	245.52	1,054.52	567.00	482.41	84.59	6.703				
12,150.00	11,819.80	12,079.65	11,806.38	42.16	43.83	88.73	316.61	1,061.88	572.05	487.24	84.80	6.745				
12,200.00	11,820.00	12,157.19	11,817.89	42.28	43.95	89.75	393.13	1,065.84	574.85	489.87	84.98	6.764				
12,250.00	11,820.00	12,225.80	11,820.00	42.41	44.07	89.96	461.67	1,066.21	575.35	490.15	85.20	6.753				
12,300.00	11,820.00	12,275.80	11,820.00	42.54	44.16	89.96	511.67	1,065.89	575.34	489.90	85.44	6.734				
12,350.00	11,820.00	12,325.80	11,820.00	42.70	44.27	89.96	561.67	1,065.57	575.33	489.62	85.71	6.712				
12,400.00	11,820.00	12,375.80	11,820.00	42.86	44.39	89.96	611.67	1,065.24	575.32	489.32	86.00	6.690				
12,450.00	11,820.00	12,425.80	11,820.00	43.04	44.52	89.96	661.67	1,064.92	575.31	488.99	86.32	6.665				
12,500.00	11,820.00	12,475.80	11,820.00	43.22	44.67	89.96	711.67	1,064.60	575.30	488.65	86.66	6.639				
12,550.00	11,820.00	12,525.80	11,820.00	43.42	44.82	89.96	761.67	1,064.27	575.30	488.27	87.03	6.611				
12,600.00	11,820.00	12,575.80	11,820.00	43.62	44.99	89.96	811.66	1,063.95	575.29	487.88	87.41	6.582				
12,650.00	11,820.00	12,625.80	11,820.00	43.84	45.18	89.96	861.66	1,063.63	575.28	487.46	87.82	6.551				
12,700.00	11,820.00	12,675.80	11,820.00	44.07	45.37	89.96	911.66	1,063.31	575.27	487.02	88.25	6.519				
12,750.00	11,820.00	12,725.80	11,820.00	44.31	45.58	89.96	961.66	1,062.98	575.26	486.55	88.70	6.485				
12,800.00	11,820.00	12,775.80	11,820.00	44.55	45.80	89.96	1,011.66	1,062.66	575.25	486.08	89.17	6.451				
12,850.00	11,820.00	12,825.80	11,820.00	44.82	46.03	89.96	1,061.66	1,062.34	575.24	485.57	89.67	6.415				
12,900.00	11,820.00	12,875.80	11,820.00	45.08	46.27	89.96	1,111.66	1,062.01	575.23	485.05	90.18	6.378				
12,950.00	11,820.00	12,925.80	11,820.00	45.37	46.52	89.96	1,161.66	1,061.69	575.22	484.50	90.73	6.340				

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,000.00	11,820.00	12,975.80	11,820.00	45.65	46.78	89.96	1,211.66	1,061.37	575.21	483.94	91.28	6.302		
13,050.00	11,820.00	13,025.80	11,820.00	45.95	47.05	89.96	1,261.66	1,061.05	575.20	483.34	91.86	6.262		
13,100.00	11,820.00	13,075.80	11,820.00	46.26	47.33	89.96	1,311.65	1,060.72	575.19	482.74	92.45	6.222		
13,150.00	11,820.00	13,125.80	11,820.00	46.58	47.62	89.96	1,361.65	1,060.40	575.18	482.12	93.07	6.180		
13,200.00	11,820.00	13,175.80	11,820.00	46.90	47.93	89.96	1,411.65	1,060.08	575.18	481.48	93.70	6.139		
13,250.00	11,820.00	13,225.80	11,820.00	47.24	48.24	89.96	1,461.65	1,059.75	575.17	480.81	94.35	6.096		
13,300.00	11,820.00	13,275.80	11,820.00	47.58	48.56	89.96	1,511.65	1,059.43	575.16	480.14	95.02	6.053		
13,350.00	11,820.00	13,325.80	11,820.00	47.93	48.88	89.96	1,561.65	1,059.11	575.15	479.44	95.71	6.009		
13,400.00	11,820.00	13,375.80	11,820.00	48.29	49.22	89.96	1,611.65	1,058.79	575.14	478.73	96.41	5.966		
13,450.00	11,820.00	13,425.80	11,820.00	48.66	49.57	89.96	1,661.65	1,058.46	575.13	477.99	97.14	5.921		
13,500.00	11,820.00	13,475.80	11,820.00	49.04	49.92	89.96	1,711.65	1,058.14	575.12	477.25	97.87	5.876		
13,550.00	11,820.00	13,525.80	11,820.00	49.42	50.28	89.96	1,761.65	1,057.82	575.11	476.48	98.63	5.831		
13,600.00	11,820.00	13,575.80	11,820.00	49.81	50.65	89.96	1,811.64	1,057.49	575.10	475.71	99.39	5.786		
13,650.00	11,820.00	13,625.80	11,820.00	50.21	51.03	89.96	1,861.64	1,057.17	575.09	474.91	100.18	5.741		
13,700.00	11,820.00	13,675.80	11,820.00	50.62	51.42	89.96	1,911.64	1,056.85	575.08	474.11	100.98	5.695		
13,750.00	11,820.00	13,725.80	11,820.00	51.04	51.81	89.96	1,961.64	1,056.52	575.07	473.28	101.79	5.649		
13,800.00	11,820.00	13,775.80	11,820.00	51.45	52.21	89.96	2,011.64	1,056.20	575.06	472.45	102.62	5.604		
13,850.00	11,820.00	13,825.80	11,820.00	51.88	52.62	89.96	2,061.64	1,055.88	575.05	471.59	103.46	5.558		
13,900.00	11,820.00	13,875.80	11,820.00	52.31	53.03	89.96	2,111.64	1,055.56	575.05	470.73	104.32	5.513		
13,950.00	11,820.00	13,925.80	11,820.00	52.76	53.45	89.96	2,161.64	1,055.23	575.04	469.85	105.19	5.467		
14,000.00	11,820.00	13,975.80	11,820.00	53.20	53.88	89.96	2,211.64	1,054.91	575.03	468.96	106.07	5.421		
14,050.00	11,820.00	14,025.80	11,820.00	53.66	54.31	89.96	2,261.63	1,054.59	575.02	468.05	106.96	5.376		
14,100.00	11,820.00	14,075.80	11,820.00	54.11	54.75	89.96	2,311.63	1,054.26	575.01	467.14	107.87	5.331		
14,150.00	11,820.00	14,125.80	11,820.00	54.58	55.20	89.96	2,361.63	1,053.94	575.00	466.21	108.79	5.285		
14,200.00	11,820.00	14,175.80	11,820.00	55.05	55.65	89.96	2,411.63	1,053.62	574.99	465.27	109.72	5.241		
14,250.00	11,820.00	14,225.80	11,820.00	55.53	56.11	89.96	2,461.63	1,053.30	574.98	464.32	110.66	5.196		
14,300.00	11,820.00	14,275.80	11,820.00	56.01	56.58	89.96	2,511.63	1,052.97	574.97	463.36	111.61	5.151		
14,350.00	11,820.00	14,325.80	11,820.00	56.50	57.05	89.96	2,561.63	1,052.65	574.96	462.38	112.58	5.107		
14,400.00	11,820.00	14,375.80	11,820.00	56.99	57.52	89.96	2,611.63	1,052.33	574.95	461.40	113.55	5.063		
14,450.00	11,820.00	14,425.80	11,820.00	57.49	58.00	89.96	2,661.63	1,052.00	574.94	460.41	114.54	5.020		
14,500.00	11,820.00	14,475.80	11,820.00	57.98	58.49	89.96	2,711.63	1,051.68	574.93	459.40	115.53	4.976 Alert		
14,550.00	11,820.00	14,525.80	11,820.00	58.49	58.98	89.96	2,761.62	1,051.36	574.93	458.39	116.54	4.933 Alert		
14,600.00	11,820.00	14,575.80	11,820.00	59.00	59.47	89.96	2,811.62	1,051.04	574.92	457.37	117.55	4.891 Alert		
14,650.00	11,820.00	14,625.80	11,820.00	59.52	59.97	89.96	2,861.62	1,050.71	574.91	456.33	118.57	4.849 Alert		
14,700.00	11,820.00	14,675.80	11,820.00	60.04	60.48	89.96	2,911.62	1,050.39	574.90	455.29	119.60	4.807 Alert		
14,750.00	11,820.00	14,725.80	11,820.00	60.57	60.99	89.96	2,961.62	1,050.07	574.89	454.24	120.65	4.765 Alert		
14,800.00	11,820.00	14,775.80	11,820.00	61.09	61.50	89.96	3,011.62	1,049.74	574.88	453.18	121.69	4.724 Alert		
14,850.00	11,820.00	14,825.80	11,820.00	61.63	62.02	89.96	3,061.62	1,049.42	574.87	452.12	122.75	4.683 Alert		
14,900.00	11,820.00	14,875.80	11,820.00	62.16	62.54	89.96	3,111.62	1,049.10	574.86	451.04	123.82	4.643 Alert		
14,950.00	11,820.00	14,925.80	11,820.00	62.70	63.07	89.96	3,161.62	1,048.78	574.85	449.96	124.89	4.603 Alert		
15,000.00	11,820.00	14,975.80	11,820.00	63.25	63.60	89.96	3,211.61	1,048.45	574.84	448.87	125.97	4.563 Alert		
15,050.00	11,820.00	15,025.80	11,820.00	63.80	64.13	89.96	3,261.61	1,048.13	574.83	447.77	127.06	4.524 Alert		
15,100.00	11,820.00	15,075.80	11,820.00	64.35	64.67	89.96	3,311.61	1,047.81	574.82	446.66	128.16	4.485 Alert		
15,150.00	11,820.00	15,125.80	11,820.00	64.90	65.21	89.96	3,361.61	1,047.48	574.81	445.55	129.26	4.447 Alert		
15,200.00	11,820.00	15,175.80	11,820.00	65.46	65.76	89.96	3,411.61	1,047.16	574.81	444.43	130.37	4.409 Alert		
15,250.00	11,820.00	15,225.80	11,820.00	66.02	66.31	89.96	3,461.61	1,046.84	574.80	443.30	131.49	4.371 Alert		
15,300.00	11,820.00	15,275.80	11,820.00	66.59	66.86	89.96	3,511.61	1,046.52	574.79	442.17	132.61	4.334 Alert		
15,350.00	11,820.00	15,325.80	11,820.00	67.16	67.41	89.96	3,561.61	1,046.19	574.78	441.03	133.75	4.297 Alert		
15,400.00	11,820.00	15,375.80	11,820.00	67.73	67.97	89.96	3,611.61	1,045.87	574.77	439.89	134.88	4.261 Alert		
15,450.00	11,820.00	15,425.80	11,820.00	68.30	68.54	89.96	3,661.61	1,045.55	574.76	438.73	136.03	4.225 Alert		
15,500.00	11,820.00	15,475.80	11,820.00	68.88	69.10	89.96	3,711.60	1,045.22	574.75	437.58	137.17	4.190 Alert		
15,550.00	11,820.00	15,525.80	11,820.00	69.46	69.67	89.96	3,761.60	1,044.90	574.74	436.41	138.33	4.155 Alert		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan 1												Offset Well Error:	0.50 ft
Survey Program: 0-MWD+HDGM													
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
15,600.00	11,820.00	15,575.80	11,820.00	70.04	70.24	89.96	3,811.60	1,044.58	574.73	435.24	139.49	4.120	Alert
15,650.00	11,820.00	15,625.80	11,820.00	70.63	70.81	89.96	3,861.60	1,044.26	574.72	434.07	140.66	4.086	Alert
15,700.00	11,820.00	15,675.80	11,820.00	71.21	71.39	89.96	3,911.60	1,043.93	574.71	432.89	141.83	4.052	Alert
15,750.00	11,820.00	15,725.80	11,820.00	71.80	71.97	89.96	3,961.60	1,043.61	574.70	431.70	143.00	4.019	Alert
15,800.00	11,820.00	15,775.80	11,820.00	72.40	72.55	89.96	4,011.60	1,043.29	574.69	430.51	144.18	3.986	Alert
15,850.00	11,820.00	15,825.80	11,820.00	72.99	73.14	89.96	4,061.60	1,042.96	574.69	429.31	145.37	3.953	Alert
15,900.00	11,820.00	15,875.80	11,820.00	73.59	73.73	89.96	4,111.60	1,042.64	574.68	428.11	146.56	3.921	Alert
15,950.00	11,820.00	15,925.80	11,820.00	74.19	74.32	89.96	4,161.59	1,042.32	574.67	426.91	147.76	3.889	Alert
16,000.00	11,820.00	15,975.80	11,820.00	74.79	74.91	89.96	4,211.59	1,042.00	574.66	425.70	148.96	3.858	Alert
16,050.00	11,820.00	16,025.80	11,820.00	75.40	75.50	89.96	4,261.59	1,041.67	574.65	424.48	150.17	3.827	Alert
16,100.00	11,820.00	16,075.80	11,820.00	76.01	76.10	89.96	4,311.59	1,041.35	574.64	423.26	151.38	3.796	Alert
16,150.00	11,820.00	16,125.80	11,820.00	76.62	76.70	89.96	4,361.59	1,041.03	574.63	422.04	152.59	3.766	Alert
16,200.00	11,820.00	16,175.80	11,820.00	77.23	77.30	89.96	4,411.59	1,040.70	574.62	420.81	153.81	3.736	Alert
16,250.00	11,820.00	16,225.80	11,820.00	77.84	77.91	89.96	4,461.59	1,040.38	574.61	419.58	155.03	3.706	Alert
16,300.00	11,820.00	16,275.80	11,820.00	78.45	78.51	89.96	4,511.59	1,040.06	574.60	418.34	156.26	3.677	Alert
16,350.00	11,820.00	16,325.80	11,820.00	79.07	79.12	89.96	4,561.59	1,039.74	574.59	417.10	157.49	3.648	Alert
16,400.00	11,820.00	16,375.80	11,820.00	79.69	79.73	89.96	4,611.59	1,039.41	574.58	415.86	158.72	3.620	Alert
16,450.00	11,820.00	16,425.80	11,820.00	80.31	80.34	89.96	4,661.58	1,039.09	574.57	414.61	159.96	3.592	Alert
16,500.00	11,820.00	16,475.80	11,820.00	80.93	80.96	89.96	4,711.58	1,038.77	574.56	413.36	161.20	3.564	Alert
16,550.00	11,820.00	16,525.80	11,820.00	81.56	81.57	89.96	4,761.58	1,038.44	574.56	412.11	162.45	3.537	Alert
16,600.00	11,820.00	16,575.80	11,820.00	82.19	82.19	89.96	4,811.58	1,038.12	574.55	410.85	163.70	3.510	Alert
16,650.00	11,820.00	16,625.80	11,820.00	82.81	82.81	89.96	4,861.58	1,037.80	574.54	409.59	164.95	3.483	Alert
16,700.00	11,820.00	16,675.80	11,820.00	83.44	83.43	89.96	4,911.58	1,037.47	574.53	408.32	166.21	3.457	Alert
16,750.00	11,820.00	16,725.80	11,820.00	84.07	84.06	89.96	4,961.58	1,037.15	574.52	407.05	167.47	3.431	Alert
16,800.00	11,820.00	16,775.80	11,820.00	84.71	84.68	89.96	5,011.58	1,036.83	574.51	405.78	168.73	3.405	Alert
16,850.00	11,820.00	16,825.80	11,820.00	85.34	85.31	89.96	5,061.58	1,036.51	574.50	404.51	169.99	3.380	Alert
16,900.00	11,820.00	16,875.80	11,820.00	85.98	85.94	89.96	5,111.58	1,036.18	574.49	403.23	171.26	3.354	Alert
16,950.00	11,820.00	16,925.80	11,820.00	86.61	86.57	89.96	5,161.57	1,035.86	574.48	401.95	172.53	3.330	Alert
17,000.00	11,820.00	16,975.80	11,820.00	87.25	87.20	89.96	5,211.57	1,035.54	574.47	400.67	173.81	3.305	Alert
17,050.00	11,820.00	17,025.80	11,820.00	87.89	87.83	89.96	5,261.57	1,035.21	574.46	399.38	175.09	3.281	Alert
17,100.00	11,820.00	17,075.80	11,820.00	88.53	88.46	89.96	5,311.57	1,034.89	574.45	398.09	176.36	3.257	Alert
17,150.00	11,820.00	17,125.80	11,820.00	89.18	89.10	89.96	5,361.57	1,034.57	574.44	396.80	177.65	3.234	Alert
17,200.00	11,820.00	17,175.80	11,820.00	89.82	89.74	89.96	5,411.57	1,034.25	574.44	395.50	178.93	3.210	Alert
17,250.00	11,820.00	17,225.80	11,820.00	90.47	90.38	89.96	5,461.57	1,033.92	574.43	394.20	180.22	3.187	Alert
17,300.00	11,820.00	17,275.80	11,820.00	91.11	91.02	89.96	5,511.57	1,033.60	574.42	392.91	181.51	3.165	Alert
17,350.00	11,820.00	17,325.80	11,820.00	91.76	91.66	89.96	5,561.57	1,033.28	574.41	391.60	182.81	3.142	Alert
17,400.00	11,820.00	17,375.80	11,820.00	92.41	92.30	89.96	5,611.56	1,032.95	574.40	390.30	184.10	3.120	Alert
17,450.00	11,820.00	17,425.80	11,820.00	93.06	92.94	89.96	5,661.56	1,032.63	574.39	388.99	185.40	3.098	Alert
17,500.00	11,820.00	17,475.80	11,820.00	93.71	93.59	89.96	5,711.56	1,032.31	574.38	387.68	186.70	3.077	Alert
17,550.00	11,820.00	17,525.80	11,820.00	94.36	94.23	89.96	5,761.56	1,031.99	574.37	386.37	188.00	3.055	Alert
17,600.00	11,820.00	17,575.80	11,820.00	95.02	94.88	89.96	5,811.56	1,031.66	574.36	385.05	189.31	3.034	Alert
17,650.00	11,820.00	17,625.80	11,820.00	95.67	95.53	89.96	5,861.56	1,031.34	574.35	383.74	190.61	3.013	Alert
17,700.00	11,820.00	17,675.80	11,820.00	96.33	96.18	89.96	5,911.56	1,031.02	574.34	382.42	191.92	2.993	Alert
17,750.00	11,820.00	17,725.80	11,820.00	96.98	96.83	89.96	5,961.56	1,030.69	574.33	381.10	193.24	2.972	Alert
17,800.00	11,820.00	17,775.80	11,820.00	97.64	97.48	89.96	6,011.56	1,030.37	574.32	379.78	194.55	2.952	Alert
17,850.00	11,820.00	17,825.80	11,820.00	98.30	98.14	89.96	6,061.56	1,030.05	574.32	378.45	195.86	2.932	Alert
17,900.00	11,820.00	17,875.80	11,820.00	98.96	98.79	89.96	6,111.55	1,029.73	574.31	377.12	197.18	2.913	Alert
17,950.00	11,820.00	17,925.80	11,820.00	99.62	99.45	89.96	6,161.55	1,029.40	574.30	375.79	198.50	2.893	Alert
18,000.00	11,820.00	17,975.80	11,820.00	100.28	100.10	89.96	6,211.55	1,029.08	574.29	374.46	199.82	2.874	Alert
18,050.00	11,820.00	18,025.80	11,820.00	100.95	100.76	89.96	6,261.55	1,028.76	574.28	373.13	201.15	2.855	Alert
18,100.00	11,820.00	18,075.80	11,820.00	101.61	101.42	89.96	6,311.55	1,028.43	574.27	371.80	202.47	2.836	Alert
18,150.00	11,820.00	18,125.80	11,820.00	102.27	102.08	89.96	6,361.55	1,028.11	574.26	370.46	203.80	2.818	Alert

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan 1													Offset Well Error:	0.50 ft
Survey Program: 0-MWD+HDGM														
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)	
18,200.00	11,820.00	18,175.80	11,820.00	102.94	102.74	89.96	6,411.55	1,027.79	574.25	369.12	205.13	2,799	Alert	
18,250.00	11,820.00	18,225.80	11,820.00	103.61	103.40	89.96	6,461.55	1,027.47	574.24	367.78	206.46	2,781	Alert	
18,300.00	11,820.00	18,275.80	11,820.00	104.27	104.06	89.96	6,511.55	1,027.14	574.23	366.44	207.79	2,764	Alert	
18,350.00	11,820.00	18,325.80	11,820.00	104.94	104.72	89.96	6,561.54	1,026.82	574.22	365.10	209.13	2,746	Alert	
18,400.00	11,820.00	18,375.80	11,820.00	105.61	105.39	89.96	6,611.54	1,026.50	574.21	363.75	210.46	2,728	Alert	
18,450.00	11,820.00	18,425.80	11,820.00	106.28	106.05	89.96	6,661.54	1,026.17	574.20	362.41	211.80	2,711	Alert	
18,500.00	11,820.00	18,475.80	11,820.00	106.95	106.72	89.96	6,711.54	1,025.85	574.19	361.06	213.14	2,694	Alert	
18,550.00	11,820.00	18,525.80	11,820.00	107.62	107.38	89.96	6,761.54	1,025.53	574.19	359.71	214.48	2,677	Alert	
18,600.00	11,820.00	18,575.80	11,820.00	108.29	108.05	89.96	6,811.54	1,025.21	574.18	358.36	215.82	2,660	Alert	
18,650.00	11,820.00	18,625.80	11,820.00	108.96	108.72	89.96	6,861.54	1,024.88	574.17	357.00	217.16	2,644	Alert	
18,700.00	11,820.00	18,675.80	11,820.00	109.64	109.38	89.96	6,911.54	1,024.56	574.16	355.65	218.51	2,628	Alert	
18,750.00	11,820.00	18,725.80	11,820.00	110.31	110.05	89.96	6,961.54	1,024.24	574.15	354.30	219.85	2,612	Alert	
18,800.00	11,820.00	18,775.80	11,820.00	110.98	110.72	89.96	7,011.54	1,023.91	574.14	352.94	221.20	2,596	Alert	
18,850.00	11,820.00	18,825.80	11,820.00	111.66	111.40	89.96	7,061.53	1,023.59	574.13	351.58	222.55	2,580	Alert	
18,900.00	11,820.00	18,875.80	11,820.00	112.34	112.07	89.96	7,111.53	1,023.27	574.12	350.22	223.90	2,564	Alert	
18,950.00	11,820.00	18,925.80	11,820.00	113.01	112.74	89.96	7,161.53	1,022.95	574.11	348.86	225.25	2,549	Alert	
19,000.00	11,820.00	18,975.80	11,820.00	113.69	113.41	89.96	7,211.53	1,022.62	574.10	347.50	226.61	2,533	Alert	
19,050.00	11,820.00	19,025.80	11,820.00	114.37	114.09	89.96	7,261.53	1,022.30	574.09	346.13	227.96	2,518	Alert	
19,100.00	11,820.00	19,075.80	11,820.00	115.05	114.76	89.96	7,311.53	1,021.98	574.08	344.77	229.32	2,503	Alert	
19,150.00	11,820.00	19,125.80	11,820.00	115.73	115.44	89.96	7,361.53	1,021.65	574.07	343.40	230.67	2,489	Minor Risk	
19,200.00	11,820.00	19,175.80	11,820.00	116.40	116.11	89.96	7,411.53	1,021.33	574.07	342.03	232.03	2,474	Minor Risk	
19,250.00	11,820.00	19,225.80	11,820.00	117.09	116.79	89.96	7,461.53	1,021.01	574.06	340.67	233.39	2,460	Minor Risk	
19,300.00	11,820.00	19,275.80	11,820.00	117.77	117.46	89.96	7,511.53	1,020.68	574.05	339.30	234.75	2,445	Minor Risk	
19,350.00	11,820.00	19,325.80	11,820.00	118.45	118.14	89.96	7,561.52	1,020.36	574.04	337.93	236.11	2,431	Minor Risk	
19,400.00	11,820.00	19,375.80	11,820.00	119.13	118.82	89.96	7,611.52	1,020.04	574.03	336.55	237.48	2,417	Minor Risk	
19,450.00	11,820.00	19,425.80	11,820.00	119.81	119.50	89.96	7,661.52	1,019.72	574.02	335.18	238.84	2,403	Minor Risk	
19,500.00	11,820.00	19,475.80	11,820.00	120.49	120.18	89.96	7,711.52	1,019.39	574.01	333.81	240.20	2,390	Minor Risk	
19,550.00	11,820.00	19,525.80	11,820.00	121.18	120.86	89.96	7,761.52	1,019.07	574.00	332.43	241.57	2,376	Minor Risk	
19,600.00	11,820.00	19,575.80	11,820.00	121.86	121.54	89.96	7,811.52	1,018.75	573.99	331.05	242.94	2,363	Minor Risk	
19,650.00	11,820.00	19,625.80	11,820.00	122.55	122.22	89.96	7,861.52	1,018.42	573.98	329.68	244.31	2,349	Minor Risk	
19,700.00	11,820.00	19,675.80	11,820.00	123.23	122.90	89.96	7,911.52	1,018.10	573.97	328.30	245.68	2,336	Minor Risk	
19,750.00	11,820.00	19,725.80	11,820.00	123.92	123.58	89.96	7,961.52	1,017.78	573.96	326.92	247.05	2,323	Minor Risk	
19,800.00	11,820.00	19,775.80	11,820.00	124.60	124.27	89.96	8,011.51	1,017.46	573.95	325.54	248.42	2,310	Minor Risk	
19,850.00	11,820.00	19,825.80	11,820.00	125.29	124.95	89.96	8,061.51	1,017.13	573.95	324.16	249.79	2,298	Minor Risk	
19,900.00	11,820.00	19,875.80	11,820.00	125.98	125.63	89.96	8,111.51	1,016.81	573.94	322.77	251.16	2,285	Minor Risk	
19,950.00	11,820.00	19,925.80	11,820.00	126.67	126.32	89.96	8,161.51	1,016.49	573.93	321.39	252.54	2,273	Minor Risk	
20,000.00	11,820.00	19,975.80	11,820.00	127.35	127.00	89.96	8,211.51	1,016.16	573.92	320.01	253.91	2,260	Minor Risk	
20,050.00	11,820.00	20,025.80	11,820.00	128.04	127.69	89.96	8,261.51	1,015.84	573.91	318.62	255.29	2,248	Minor Risk	
20,100.00	11,820.00	20,075.80	11,820.00	128.73	128.37	89.96	8,311.51	1,015.52	573.90	317.23	256.66	2,236	Minor Risk	
20,150.00	11,820.00	20,125.80	11,820.00	129.42	129.06	89.96	8,361.51	1,015.20	573.89	315.85	258.04	2,224	Minor Risk	
20,200.00	11,820.00	20,175.80	11,820.00	130.11	129.75	89.96	8,411.51	1,014.87	573.88	314.46	259.42	2,212	Minor Risk	
20,250.00	11,820.00	20,225.80	11,820.00	130.80	130.43	89.96	8,461.51	1,014.55	573.87	313.07	260.80	2,200	Minor Risk	
20,300.00	11,820.00	20,275.80	11,820.00	131.49	131.12	89.96	8,511.50	1,014.23	573.86	311.68	262.18	2,189	Minor Risk	
20,350.00	11,820.00	20,325.80	11,820.00	132.18	131.81	89.96	8,561.50	1,013.90	573.85	310.29	263.56	2,177	Minor Risk	
20,400.00	11,820.00	20,375.80	11,820.00	132.87	132.50	89.96	8,611.50	1,013.58	573.84	308.90	264.94	2,166	Minor Risk	
20,450.00	11,820.00	20,425.80	11,820.00	133.57	133.19	89.96	8,661.50	1,013.26	573.83	307.51	266.33	2,155	Minor Risk	
20,500.00	11,820.00	20,475.80	11,820.00	134.26	133.87	89.96	8,711.50	1,012.94	573.82	306.11	267.71	2,143	Minor Risk	
20,550.00	11,820.00	20,525.80	11,820.00	134.95	134.56	89.96	8,761.50	1,012.61	573.82	304.72	269.10	2,132	Minor Risk	
20,600.00	11,820.00	20,575.80	11,820.00	135.64	135.25	89.96	8,811.50	1,012.29	573.81	303.33	270.48	2,121	Minor Risk	
20,650.00	11,820.00	20,625.80	11,820.00	136.34	135.94	89.96	8,861.50	1,011.97	573.80	301.93	271.87	2,111	Minor Risk	
20,700.00	11,820.00	20,675.80	11,820.00	137.03	136.64	89.96	8,911.50	1,011.64	573.79	300.53	273.25	2,100	Minor Risk	
20,750.00	11,820.00	20,725.80	11,820.00	137.73	137.33	89.96	8,961.49	1,011.32	573.78	299.14	274.64	2,089	Minor Risk	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

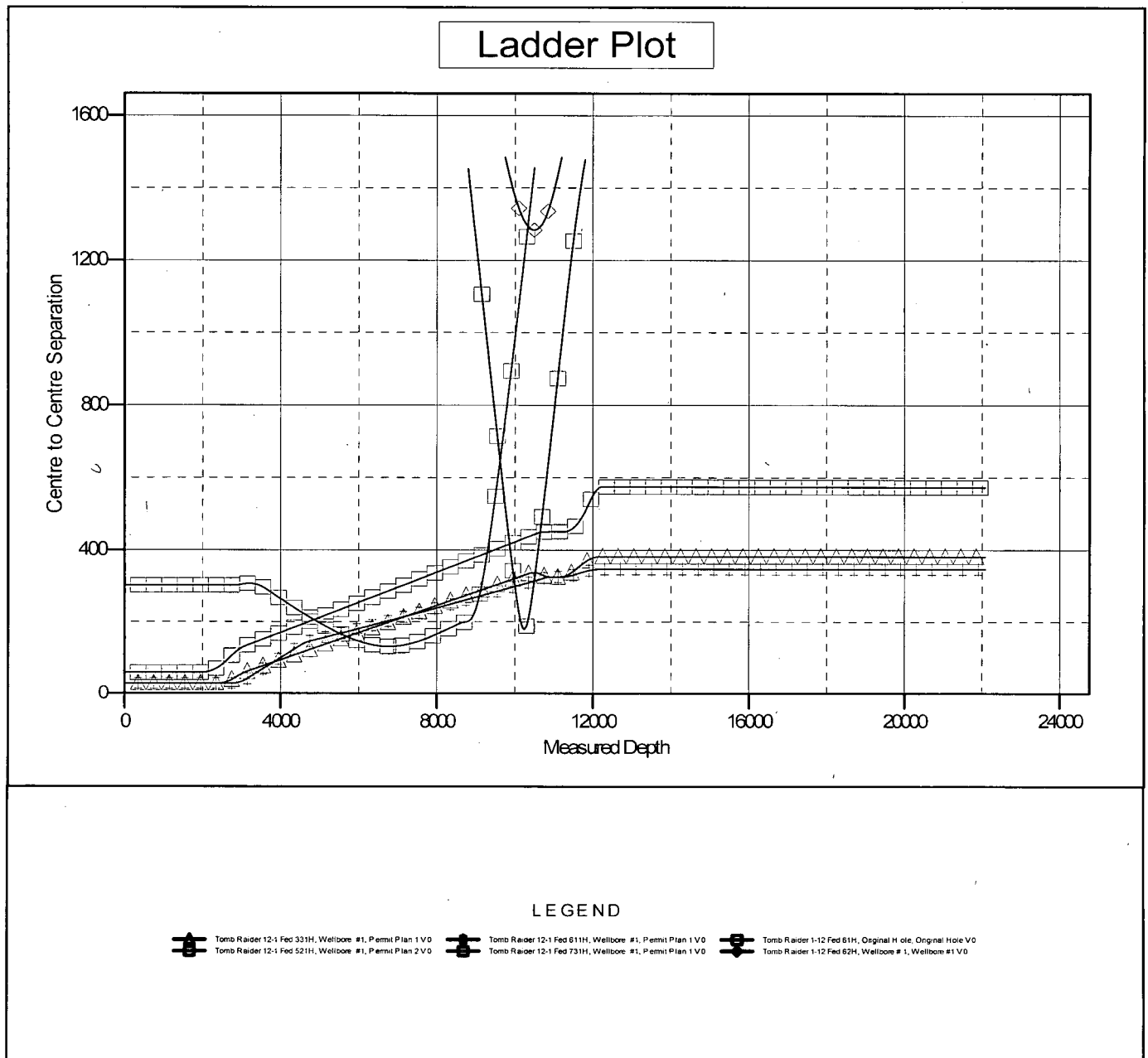
Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 731H - Wellbore #1 - Permit Plan 1														
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
20,800.00	11,820.00	20,775.80	11,820.00	138.42	138.02	89.96	9,011.49	1,011.00	573.77	297.74	276.03	2.079	Minor Risk	
20,850.00	11,820.00	20,825.80	11,820.00	139.11	138.71	89.96	9,061.49	1,010.68	573.76	296.34	277.42	2.068	Minor Risk	
20,900.00	11,820.00	20,875.80	11,820.00	139.81	139.40	89.96	9,111.49	1,010.35	573.75	294.94	278.81	2.058	Minor Risk	
20,950.00	11,820.00	20,925.80	11,820.00	140.51	140.10	89.96	9,161.49	1,010.03	573.74	293.54	280.20	2.048	Minor Risk	
21,000.00	11,820.00	20,975.80	11,820.00	141.20	140.79	89.96	9,211.49	1,009.71	573.73	292.14	281.59	2.037	Minor Risk	
21,050.00	11,820.00	21,025.80	11,820.00	141.90	141.48	89.96	9,261.49	1,009.38	573.72	290.74	282.98	2.027	Minor Risk	
21,100.00	11,820.00	21,075.80	11,820.00	142.59	142.18	89.96	9,311.49	1,009.06	573.71	289.34	284.37	2.017	Minor Risk	
21,150.00	11,820.00	21,125.80	11,820.00	143.29	142.87	89.96	9,361.49	1,008.74	573.70	287.94	285.77	2.008	Minor Risk	
21,200.00	11,820.00	21,175.80	11,820.00	143.99	143.57	89.96	9,411.49	1,008.42	573.70	286.54	287.16	1.998	Minor Risk	
21,250.00	11,820.00	21,225.80	11,820.00	144.69	144.26	89.96	9,461.48	1,008.09	573.69	285.13	288.55	1.988	Minor Risk	
21,300.00	11,820.00	21,275.80	11,820.00	145.38	144.96	89.96	9,511.48	1,007.77	573.68	283.73	289.95	1.979	Minor Risk	
21,350.00	11,820.00	21,325.80	11,820.00	146.08	145.65	89.96	9,561.48	1,007.45	573.67	282.32	291.35	1.969	Minor Risk	
21,400.00	11,820.00	21,375.80	11,820.00	146.78	146.35	89.96	9,611.48	1,007.12	573.66	280.92	292.74	1.960	Minor Risk	
21,450.00	11,820.00	21,425.80	11,820.00	147.48	147.04	89.96	9,661.48	1,006.80	573.65	279.51	294.14	1.950	Minor Risk	
21,500.00	11,820.00	21,475.80	11,820.00	148.18	147.74	89.96	9,711.48	1,006.48	573.64	278.10	295.54	1.941	Minor Risk	
21,550.00	11,820.00	21,525.80	11,820.00	148.88	148.44	89.96	9,761.48	1,006.16	573.63	276.70	296.93	1.932	Minor Risk	
21,600.00	11,820.00	21,575.80	11,820.00	149.58	149.13	89.96	9,811.48	1,005.83	573.62	275.29	298.33	1.923	Minor Risk	
21,650.00	11,820.00	21,625.80	11,820.00	150.28	149.83	89.96	9,861.48	1,005.51	573.61	273.88	299.73	1.914	Minor Risk	
21,700.00	11,820.00	21,675.80	11,820.00	150.98	150.53	89.96	9,911.48	1,005.19	573.60	272.47	301.13	1.905	Minor Risk	
21,750.00	11,820.00	21,725.80	11,820.00	151.68	151.23	89.96	9,961.47	1,004.86	573.59	271.06	302.53	1.896	Minor Risk	
21,800.00	11,820.00	21,775.80	11,820.00	152.38	151.93	89.96	10,011.47	1,004.54	573.58	269.65	303.93	1.887	Minor Risk	
21,850.00	11,820.00	21,825.80	11,820.00	153.08	152.62	89.96	10,061.47	1,004.22	573.58	268.24	305.33	1.879	Minor Risk	
21,900.00	11,820.00	21,875.80	11,820.00	153.78	153.32	89.96	10,111.47	1,003.89	573.57	266.83	306.73	1.870	Minor Risk	
21,950.00	11,820.00	21,925.80	11,820.00	154.48	154.02	89.96	10,161.47	1,003.57	573.56	265.42	308.14	1.861	Minor Risk	
22,000.00	11,820.00	21,975.80	11,820.00	155.18	154.72	89.96	10,211.47	1,003.25	573.55	264.01	309.54	1.853	Minor Risk	
22,050.00	11,820.00	22,025.80	11,820.00	155.88	155.42	89.96	10,261.47	1,002.93	573.54	262.60	310.94	1.845	Minor Risk	
22,083.37	11,820.00	22,059.16	11,820.00	156.35	155.89	89.96	10,294.83	1,002.71	573.53	261.65	311.88	1.839	Minor Risk, SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3513.20ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Tomb Raider 12-1 Fed 701H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.32°



Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.20ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3513.20ft

Offset Depths are relative to Offset Datum

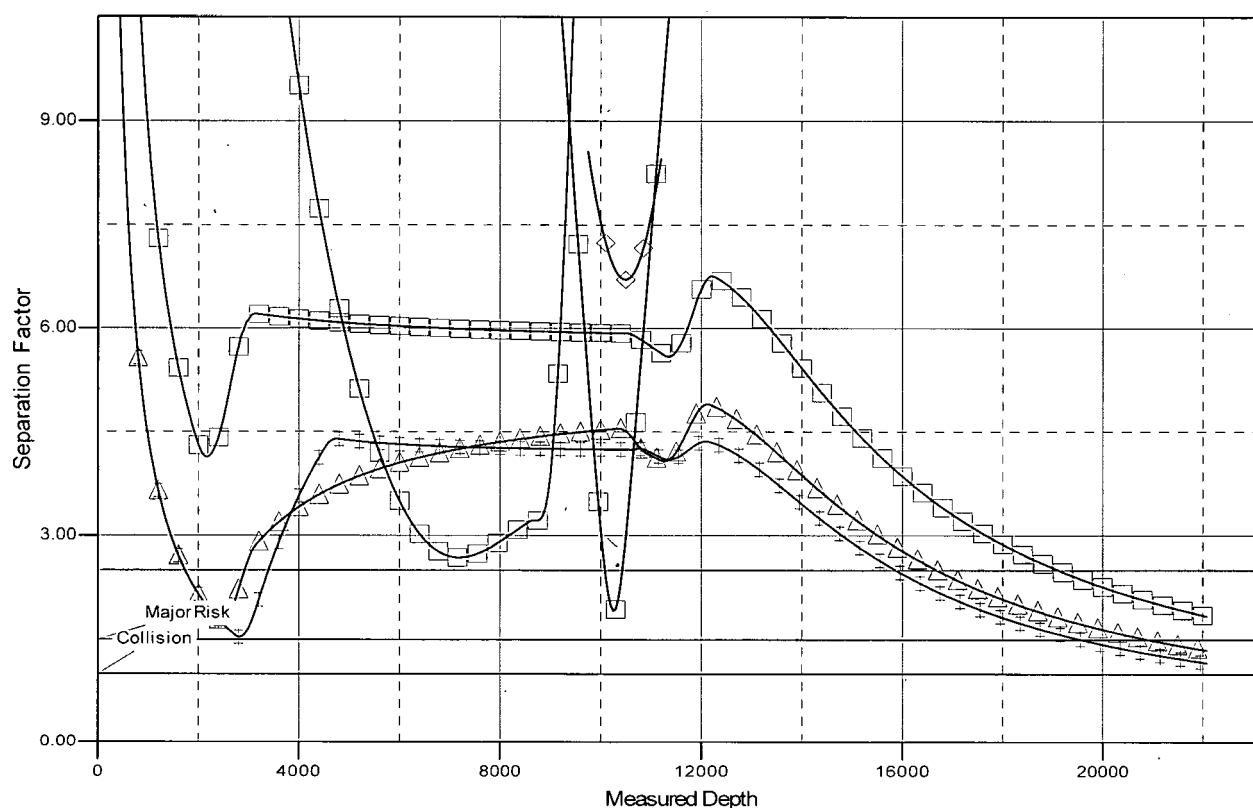
Central Meridian is -104.333334

Coordinates are relative to: Tomb Raider 12-1 Fed 701H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.32°

Separation Factor Plot



LEGEND

- Tomb Raider 12-1 Fed 331H, Wellbore #1, Permit Plan 1 V0
- Tomb Raider 12-1 Fed 611H, Wellbore #1, Permit Plan 1 V0
- Tomb Raider 12-1 Fed 621H, Wellbore #1, Wellbore #1 V0
- Tomb Raider 12-1 Fed 731H, Wellbore #1, Permit Plan 1 V0
- Tomb Raider 12-1 Fed 751H, Wellbore #1, Wellbore #1 V0

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 12-T23S-R31E

Tomb Raider 12-1 Fed 701H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

30 November, 2018

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3513.20ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3513.20ft
Site:	Sec 12-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Project	Eddy County (NAD 83 NM Eastern)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 12-T23S-R31E			
Site Position:		Northing:	477,636.10 usft	Latitude: 32.311700
From:	Map	Easting:	724,631.57 usft	Longitude: -103.740028
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.32 °

Well	Tomb Raider 12-1 Fed 701H			
Well Position	+N/-S	0.00 ft	Northing:	477,887.32 usft
	+E/-W	0.00 ft	Easting:	724,860.40 usft
Position Uncertainty		0.50 ft	Wellhead Elevation:	Ground Level: 3,488.20 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2015	11/29/2018	6.88	60.10	47,823.05462580

Design	Permit Plan 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	2.39

Plan Survey Tool Program	Date	11/30/2018		
Depth From	Depth To	Survey (Wellbore)	Tool Name	Remarks
(ft)	(ft)			
1	0.00	22,083.37 Permit Plan 1 (Wellbore #1)	MWD+HDGM	
			OWSG MWD + HDGM	

Plan Sections											
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target	
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)		
(ft)			(ft)			(°/100usft)	(°/100usft)	(°/100usft)			
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2,750.00	0.00	0.00	2,750.00	0.00	0.00	0.00	0.00	0.00	0.00		
3,140.48	3.90	112.00	3,140.18	-4.98	12.33	1.00	1.00	0.00	112.00		
10,654.62	3.90	112.00	10,636.88	-196.68	486.78	0.00	0.00	0.00	0.00		
10,914.95	0.00	0.00	10,897.00	-200.00	495.00	1.50	-1.50	0.00	180.00		
11,264.99	0.00	0.00	11,247.04	-200.00	495.00	0.00	0.00	0.00	0.00		
12,164.99	90.00	359.64	11,820.00	372.95	491.41	10.00	10.00	0.00	359.64	PBHL - Tomb Raider	
22,083.37	90.00	359.64	11,820.00	10,291.13	429.19	0.00	0.00	0.00	0.00	PBHL - Tomb Raider	

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3513.20ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3513.20ft
Site:	Sec 12-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
100.00	0.00	0.00	100.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
200.00	0.00	0.00	200.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
300.00	0.00	0.00	300.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
400.00	0.00	0.00	400.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
500.00	0.00	0.00	500.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
600.00	0.00	0.00	600.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
700.00	0.00	0.00	700.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
800.00	0.00	0.00	800.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
900.00	0.00	0.00	900.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
1,000.00	0.00	0.00	1,000.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
1,100.00	0.00	0.00	1,100.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
1,200.00	0.00	0.00	1,200.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
1,300.00	0.00	0.00	1,300.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
1,400.00	0.00	0.00	1,400.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
1,500.00	0.00	0.00	1,500.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
1,600.00	0.00	0.00	1,600.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
1,700.00	0.00	0.00	1,700.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
1,800.00	0.00	0.00	1,800.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
1,900.00	0.00	0.00	1,900.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
2,000.00	0.00	0.00	2,000.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
2,100.00	0.00	0.00	2,100.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
2,200.00	0.00	0.00	2,200.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
2,300.00	0.00	0.00	2,300.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
2,400.00	0.00	0.00	2,400.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
2,500.00	0.00	0.00	2,500.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
2,600.00	0.00	0.00	2,600.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
2,700.00	0.00	0.00	2,700.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
2,750.00	0.00	0.00	2,750.00	0.00	0.00	477,887.32	724,860.40	32.312387	-103.739283
2,800.00	0.50	112.00	2,800.00	-0.08	0.20	477,887.24	724,860.60	32.312387	-103.739282
2,900.00	1.50	112.00	2,899.98	-0.74	1.82	477,886.59	724,862.22	32.312385	-103.739277
3,000.00	2.50	112.00	2,999.92	-2.04	5.06	477,885.28	724,865.45	32.312381	-103.739267
3,100.00	3.50	112.00	3,099.78	-4.00	9.91	477,883.32	724,870.30	32.312376	-103.739251
3,140.48	3.90	112.00	3,140.18	-4.98	12.33	477,882.34	724,872.73	32.312373	-103.739243
3,200.00	3.90	112.00	3,199.56	-6.50	16.09	477,880.82	724,876.49	32.312369	-103.739231
3,300.00	3.90	112.00	3,299.33	-9.05	22.40	477,878.27	724,882.80	32.312362	-103.739211
3,400.00	3.90	112.00	3,399.10	-11.60	28.72	477,875.72	724,889.11	32.312355	-103.739190
3,500.00	3.90	112.00	3,498.86	-14.15	35.03	477,873.17	724,895.43	32.312348	-103.739170
3,600.00	3.90	112.00	3,598.63	-16.71	41.35	477,870.62	724,901.74	32.312341	-103.739150
3,700.00	3.90	112.00	3,698.40	-19.26	47.66	477,868.06	724,908.06	32.312333	-103.739129
3,800.00	3.90	112.00	3,798.17	-21.81	53.97	477,865.51	724,914.37	32.312326	-103.739109
3,900.00	3.90	112.00	3,897.93	-24.36	60.29	477,862.96	724,920.68	32.312319	-103.739088
4,000.00	3.90	112.00	3,997.70	-26.91	66.60	477,860.41	724,927.00	32.312312	-103.739068
4,100.00	3.90	112.00	4,097.47	-29.46	72.92	477,857.86	724,933.31	32.312305	-103.739048
4,200.00	3.90	112.00	4,197.24	-32.01	79.23	477,855.31	724,939.63	32.312298	-103.739027
4,300.00	3.90	112.00	4,297.01	-34.56	85.54	477,852.76	724,945.94	32.312291	-103.739007
4,400.00	3.90	112.00	4,396.77	-37.11	91.86	477,850.21	724,952.25	32.312284	-103.738986
4,500.00	3.90	112.00	4,496.54	-39.67	98.17	477,847.65	724,958.57	32.312277	-103.738966
4,600.00	3.90	112.00	4,596.31	-42.22	104.49	477,845.10	724,964.88	32.312269	-103.738946
4,700.00	3.90	112.00	4,696.08	-44.77	110.80	477,842.55	724,971.20	32.312262	-103.738925
4,800.00	3.90	112.00	4,795.85	-47.32	117.11	477,840.00	724,977.51	32.312255	-103.738905
4,900.00	3.90	112.00	4,895.61	-49.87	123.43	477,837.45	724,983.82	32.312248	-103.738884
5,000.00	3.90	112.00	4,995.38	-52.42	129.74	477,834.90	724,990.14	32.312241	-103.738864
5,100.00	3.90	112.00	5,095.15	-54.97	136.06	477,832.35	724,996.45	32.312234	-103.738844
5,200.00	3.90	112.00	5,194.92	-57.52	142.37	477,829.80	725,002.77	32.312227	-103.738823

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3513.20ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3513.20ft
Site:	Sec 12-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,300.00	3.90	112.00	5,294.68	-60.07	148.69	477,827.25	725,009.08	32.312220	-103.738803
5,400.00	3.90	112.00	5,394.45	-62.63	155.00	477,824.69	725,015.40	32.312213	-103.738783
5,500.00	3.90	112.00	5,494.22	-65.18	161.31	477,822.14	725,021.71	32.312205	-103.738762
5,600.00	3.90	112.00	5,593.99	-67.73	167.63	477,819.59	725,028.02	32.312198	-103.738742
5,700.00	3.90	112.00	5,693.76	-70.28	173.94	477,817.04	725,034.34	32.312191	-103.738721
5,800.00	3.90	112.00	5,793.52	-72.83	180.26	477,814.49	725,040.65	32.312184	-103.738701
5,900.00	3.90	112.00	5,893.29	-75.38	186.57	477,811.94	725,046.97	32.312177	-103.738681
6,000.00	3.90	112.00	5,993.06	-77.93	192.88	477,809.39	725,053.28	32.312170	-103.738660
6,100.00	3.90	112.00	6,092.83	-80.48	199.20	477,806.84	725,059.59	32.312163	-103.738640
6,200.00	3.90	112.00	6,192.60	-83.03	205.51	477,804.29	725,065.91	32.312156	-103.738619
6,300.00	3.90	112.00	6,292.36	-85.59	211.83	477,801.73	725,072.22	32.312149	-103.738599
6,400.00	3.90	112.00	6,392.13	-88.14	218.14	477,799.18	725,078.54	32.312141	-103.738579
6,500.00	3.90	112.00	6,491.90	-90.69	224.45	477,796.63	725,084.85	32.312134	-103.738558
6,600.00	3.90	112.00	6,591.67	-93.24	230.77	477,794.08	725,091.16	32.312127	-103.738538
6,700.00	3.90	112.00	6,691.43	-95.79	237.08	477,791.53	725,097.48	32.312120	-103.738517
6,800.00	3.90	112.00	6,791.20	-98.34	243.40	477,788.98	725,103.79	32.312113	-103.738497
6,900.00	3.90	112.00	6,890.97	-100.89	249.71	477,786.43	725,110.11	32.312106	-103.738477
7,000.00	3.90	112.00	6,990.74	-103.44	256.02	477,783.88	725,116.42	32.312099	-103.738456
7,100.00	3.90	112.00	7,090.51	-106.00	262.34	477,781.33	725,122.73	32.312092	-103.738436
7,200.00	3.90	112.00	7,190.27	-108.55	268.65	477,778.77	725,129.05	32.312085	-103.738415
7,300.00	3.90	112.00	7,290.04	-111.10	274.97	477,776.22	725,135.36	32.312078	-103.738395
7,400.00	3.90	112.00	7,389.81	-113.65	281.28	477,773.67	725,141.68	32.312070	-103.738375
7,500.00	3.90	112.00	7,489.58	-116.20	287.59	477,771.12	725,147.99	32.312063	-103.738354
7,600.00	3.90	112.00	7,589.35	-118.75	293.91	477,768.57	725,154.30	32.312056	-103.738334
7,700.00	3.90	112.00	7,689.11	-121.30	300.22	477,766.02	725,160.62	32.312049	-103.738314
7,800.00	3.90	112.00	7,788.88	-123.85	306.54	477,763.47	725,166.93	32.312042	-103.738293
7,900.00	3.90	112.00	7,888.65	-126.40	312.85	477,760.92	725,173.25	32.312035	-103.738273
8,000.00	3.90	112.00	7,988.42	-128.96	319.16	477,758.37	725,179.56	32.312028	-103.738252
8,100.00	3.90	112.00	8,088.18	-131.51	325.48	477,755.81	725,185.87	32.312021	-103.738232
8,200.00	3.90	112.00	8,187.95	-134.06	331.79	477,753.26	725,192.19	32.312014	-103.738212
8,300.00	3.90	112.00	8,287.72	-136.61	338.11	477,750.71	725,198.50	32.312006	-103.738191
8,400.00	3.90	112.00	8,387.49	-139.16	344.42	477,748.16	725,204.82	32.311999	-103.738171
8,500.00	3.90	112.00	8,487.26	-141.71	350.73	477,745.61	725,211.13	32.311992	-103.738150
8,600.00	3.90	112.00	8,587.02	-144.26	357.05	477,743.06	725,217.44	32.311985	-103.738130
8,700.00	3.90	112.00	8,686.79	-146.81	363.36	477,740.51	725,223.76	32.311978	-103.738110
8,800.00	3.90	112.00	8,786.56	-149.36	369.68	477,737.96	725,230.07	32.311971	-103.738089
8,900.00	3.90	112.00	8,886.33	-151.92	375.99	477,735.41	725,236.39	32.311964	-103.738069
9,000.00	3.90	112.00	8,986.10	-154.47	382.30	477,732.85	725,242.70	32.311957	-103.738048
9,100.00	3.90	112.00	9,085.86	-157.02	388.62	477,730.30	725,249.01	32.311950	-103.738028
9,200.00	3.90	112.00	9,185.63	-159.57	394.93	477,727.75	725,255.33	32.311942	-103.738008
9,300.00	3.90	112.00	9,285.40	-162.12	401.25	477,725.20	725,261.64	32.311935	-103.737987
9,400.00	3.90	112.00	9,385.17	-164.67	407.56	477,722.65	725,267.96	32.311928	-103.737967
9,500.00	3.90	112.00	9,484.93	-167.22	413.87	477,720.10	725,274.27	32.311921	-103.737946
9,600.00	3.90	112.00	9,584.70	-169.77	420.19	477,717.55	725,280.58	32.311914	-103.737926
9,700.00	3.90	112.00	9,684.47	-172.32	426.50	477,715.00	725,286.90	32.311907	-103.737906
9,800.00	3.90	112.00	9,784.24	-174.88	432.82	477,712.45	725,293.21	32.311900	-103.737885
9,900.00	3.90	112.00	9,884.01	-177.43	439.13	477,709.89	725,299.53	32.311893	-103.737865
10,000.00	3.90	112.00	9,983.77	-179.98	445.45	477,707.34	725,305.84	32.311886	-103.737845
10,100.00	3.90	112.00	10,083.54	-182.53	451.76	477,704.79	725,312.15	32.311878	-103.737824
10,200.00	3.90	112.00	10,183.31	-185.08	458.07	477,702.24	725,318.47	32.311871	-103.737804
10,300.00	3.90	112.00	10,283.08	-187.63	464.39	477,699.69	725,324.78	32.311864	-103.737783
10,400.00	3.90	112.00	10,382.85	-190.18	470.70	477,697.14	725,331.10	32.311857	-103.737763
10,500.00	3.90	112.00	10,482.61	-192.73	477.02	477,694.59	725,337.41	32.311850	-103.737743
10,600.00	3.90	112.00	10,582.38	-195.28	483.33	477,692.04	725,343.72	32.311843	-103.737722
10,654.62	3.90	112.00	10,636.88	-196.68	486.78	477,690.64	725,347.17	32.311839	-103.737711

Planning Report - Geographic

Database:	EDM r5000.141_Prod US.	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3513.20ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3513.20ft
Site:	Sec 12-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,700.00	3.22	112.00	10,682.17	-197.73	489.39	477,689.59	725,349.79	32.311836	-103.737703
10,800.00	1.72	112.00	10,782.07	-199.35	493.40	477,687.97	725,353.79	32.311832	-103.737690
10,900.00	0.22	112.00	10,882.05	-199.99	494.97	477,687.33	725,355.37	32.311830	-103.737685
10,914.95	0.00	0.00	10,897.00	-200.00	495.00	477,687.32	725,355.40	32.311830	-103.737684
11,000.00	0.00	0.00	10,982.05	-200.00	495.00	477,687.32	725,355.40	32.311830	-103.737684
11,100.00	0.00	0.00	11,082.05	-200.00	495.00	477,687.32	725,355.40	32.311830	-103.737684
11,200.00	0.00	0.00	11,182.05	-200.00	495.00	477,687.32	725,355.40	32.311830	-103.737684
11,264.99	0.00	0.00	11,247.04	-200.00	495.00	477,687.32	725,355.40	32.311830	-103.737684
KOP @ 11265' MD, 50' FSL, 725' FWL									
11,300.00	3.50	359.64	11,282.03	-198.93	494.99	477,688.39	725,355.39	32.311833	-103.737684
11,400.00	13.50	359.64	11,380.81	-184.17	494.90	477,703.15	725,355.30	32.311873	-103.737685
11,500.00	23.50	359.64	11,475.52	-152.47	494.70	477,734.85	725,355.10	32.311960	-103.737685
11,506.13	24.11	359.64	11,481.13	-150.00	494.69	477,737.32	725,355.08	32.311967	-103.737685
FTP @ 11506' MD, 100' FSL, 725' FWL									
11,600.00	33.50	359.64	11,563.29	-104.82	494.40	477,782.50	725,354.80	32.312091	-103.737685
11,700.00	43.50	359.64	11,641.45	-42.65	494.01	477,844.67	725,354.41	32.312262	-103.737685
11,800.00	53.50	359.64	11,707.62	32.15	493.54	477,919.48	725,353.94	32.312468	-103.737685
11,900.00	63.50	359.64	11,759.81	117.31	493.01	478,004.63	725,353.40	32.312702	-103.737685
12,000.00	73.50	359.64	11,796.41	210.23	492.43	478,097.55	725,352.82	32.312957	-103.737685
12,100.00	83.50	359.64	11,816.32	308.10	491.81	478,195.42	725,352.21	32.313226	-103.737686
12,164.99	90.00	359.64	11,820.00	372.95	491.41	478,260.27	725,351.80	32.313405	-103.737686
12,200.00	90.00	359.64	11,820.00	407.96	491.19	478,295.28	725,351.58	32.313501	-103.737686
12,300.00	90.00	359.64	11,820.00	507.96	490.56	478,395.28	725,350.95	32.313776	-103.737686
12,400.00	90.00	359.64	11,820.00	607.95	489.93	478,495.27	725,350.33	32.314051	-103.737686
12,500.00	90.00	359.64	11,820.00	707.95	489.30	478,595.27	725,349.70	32.314326	-103.737687
12,600.00	90.00	359.64	11,820.00	807.95	488.68	478,695.27	725,349.07	32.314600	-103.737687
12,700.00	90.00	359.64	11,820.00	907.95	488.05	478,795.27	725,348.45	32.314875	-103.737687
12,800.00	90.00	359.64	11,820.00	1,007.95	487.42	478,895.26	725,347.82	32.315150	-103.737687
12,900.00	90.00	359.64	11,820.00	1,107.94	486.80	478,995.26	725,347.19	32.315425	-103.737688
13,000.00	90.00	359.64	11,820.00	1,207.94	486.17	479,095.26	725,346.56	32.315700	-103.737688
13,100.00	90.00	359.64	11,820.00	1,307.94	485.54	479,195.26	725,345.94	32.315975	-103.737688
13,200.00	90.00	359.64	11,820.00	1,407.94	484.91	479,295.26	725,345.31	32.316250	-103.737688
13,300.00	90.00	359.64	11,820.00	1,507.94	484.29	479,395.25	725,344.68	32.316525	-103.737688
13,400.00	90.00	359.64	11,820.00	1,607.93	483.66	479,495.25	725,344.05	32.316799	-103.737689
13,500.00	90.00	359.64	11,820.00	1,707.93	483.03	479,595.25	725,343.43	32.317074	-103.737689
13,600.00	90.00	359.64	11,820.00	1,807.93	482.40	479,695.25	725,342.80	32.317349	-103.737689
13,700.00	90.00	359.64	11,820.00	1,907.93	481.78	479,795.25	725,342.17	32.317624	-103.737689
13,800.00	90.00	359.64	11,820.00	2,007.93	481.15	479,895.24	725,341.55	32.317899	-103.737690
13,900.00	90.00	359.64	11,820.00	2,107.92	480.52	479,995.24	725,340.92	32.318174	-103.737690
14,000.00	90.00	359.64	11,820.00	2,207.92	479.90	480,095.24	725,340.29	32.318449	-103.737690
14,100.00	90.00	359.64	11,820.00	2,307.92	479.27	480,195.24	725,339.66	32.318724	-103.737690
14,200.00	90.00	359.64	11,820.00	2,407.92	478.64	480,295.23	725,339.04	32.318998	-103.737691
14,300.00	90.00	359.64	11,820.00	2,507.92	478.01	480,395.23	725,338.41	32.319273	-103.737691
14,400.00	90.00	359.64	11,820.00	2,607.91	477.39	480,495.23	725,337.78	32.319548	-103.737691
14,500.00	90.00	359.64	11,820.00	2,707.91	476.76	480,595.23	725,337.15	32.319823	-103.737691
14,600.00	90.00	359.64	11,820.00	2,807.91	476.13	480,695.23	725,336.53	32.320098	-103.737691
14,700.00	90.00	359.64	11,820.00	2,907.91	475.50	480,795.22	725,335.90	32.320373	-103.737692
14,800.00	90.00	359.64	11,820.00	3,007.91	474.88	480,895.22	725,335.27	32.320648	-103.737692
14,900.00	90.00	359.64	11,820.00	3,107.90	474.25	480,995.22	725,334.65	32.320923	-103.737692
15,000.00	90.00	359.64	11,820.00	3,207.90	473.62	481,095.22	725,334.02	32.321197	-103.737692
15,100.00	90.00	359.64	11,820.00	3,307.90	473.00	481,195.21	725,333.39	32.321472	-103.737693
15,200.00	90.00	359.64	11,820.00	3,407.90	472.37	481,295.21	725,332.76	32.321747	-103.737693
15,300.00	90.00	359.64	11,820.00	3,507.90	471.74	481,395.21	725,332.14	32.322022	-103.737693
15,400.00	90.00	359.64	11,820.00	3,607.89	471.11	481,495.21	725,331.51	32.322297	-103.737693

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3513.20ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3513.20ft
Site:	Sec 12-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,500.00	90.00	359.64	11,820.00	3,707.89	470.49	481,595.21	725,330.88	32.322572	-103.737694
15,600.00	90.00	359.64	11,820.00	3,807.89	469.86	481,695.20	725,330.25	32.322847	-103.737694
15,700.00	90.00	359.64	11,820.00	3,907.89	469.23	481,795.20	725,329.63	32.323122	-103.737694
15,800.00	90.00	359.64	11,820.00	4,007.89	468.60	481,895.20	725,329.00	32.323396	-103.737694
15,900.00	90.00	359.64	11,820.00	4,107.88	467.98	481,995.20	725,328.37	32.323671	-103.737694
16,000.00	90.00	359.64	11,820.00	4,207.88	467.35	482,095.20	725,327.75	32.323946	-103.737695
16,100.00	90.00	359.64	11,820.00	4,307.88	466.72	482,195.19	725,327.12	32.324221	-103.737695
16,200.00	90.00	359.64	11,820.00	4,407.88	466.10	482,295.19	725,326.49	32.324496	-103.737695
16,300.00	90.00	359.64	11,820.00	4,507.88	465.47	482,395.19	725,325.86	32.324771	-103.737695
16,400.00	90.00	359.64	11,820.00	4,607.88	464.84	482,495.19	725,325.24	32.325046	-103.737696
16,500.00	90.00	359.64	11,820.00	4,707.87	464.21	482,595.18	725,324.61	32.325321	-103.737696
16,600.00	90.00	359.64	11,820.00	4,807.87	463.59	482,695.18	725,323.98	32.325595	-103.737696
16,700.00	90.00	359.64	11,820.00	4,907.87	462.96	482,795.18	725,323.35	32.325870	-103.737696
16,800.00	90.00	359.64	11,820.00	5,007.87	462.33	482,895.18	725,322.73	32.326145	-103.737697
16,822.00	90.00	359.64	11,820.00	5,029.87	462.19	482,917.18	725,322.59	32.326206	-103.737697
Cross Section @ 16822' MD, 0' FSL, 725' FWL									
16,900.00	90.00	359.64	11,820.00	5,107.87	461.70	482,995.18	725,322.10	32.326420	-103.737697
17,000.00	90.00	359.64	11,820.00	5,207.86	461.08	483,095.17	725,321.47	32.326695	-103.737697
17,100.00	90.00	359.64	11,820.00	5,307.86	460.45	483,195.17	725,320.85	32.326970	-103.737697
17,200.00	90.00	359.64	11,820.00	5,407.86	459.82	483,295.17	725,320.22	32.327245	-103.737697
17,300.00	90.00	359.64	11,820.00	5,507.86	459.20	483,395.17	725,319.59	32.327520	-103.737698
17,400.00	90.00	359.64	11,820.00	5,607.86	458.57	483,495.16	725,318.96	32.327794	-103.737698
17,500.00	90.00	359.64	11,820.00	5,707.85	457.94	483,595.16	725,318.34	32.328069	-103.737698
17,600.00	90.00	359.64	11,820.00	5,807.85	457.31	483,695.16	725,317.71	32.328344	-103.737698
17,700.00	90.00	359.64	11,820.00	5,907.85	456.69	483,795.16	725,317.08	32.328619	-103.737699
17,800.00	90.00	359.64	11,820.00	6,007.85	456.06	483,895.16	725,316.45	32.328894	-103.737699
17,900.00	90.00	359.64	11,820.00	6,107.85	455.43	483,995.15	725,315.83	32.329169	-103.737699
18,000.00	90.00	359.64	11,820.00	6,207.84	454.80	484,095.15	725,315.20	32.329444	-103.737699
18,100.00	90.00	359.64	11,820.00	6,307.84	454.18	484,195.15	725,314.57	32.329719	-103.737700
18,200.00	90.00	359.64	11,820.00	6,407.84	453.55	484,295.15	725,313.95	32.329993	-103.737700
18,300.00	90.00	359.64	11,820.00	6,507.84	452.92	484,395.15	725,313.32	32.330268	-103.737700
18,400.00	90.00	359.64	11,820.00	6,607.84	452.30	484,495.14	725,312.69	32.330543	-103.737700
18,500.00	90.00	359.64	11,820.00	6,707.83	451.67	484,595.14	725,312.06	32.330818	-103.737700
18,600.00	90.00	359.64	11,820.00	6,807.83	451.04	484,695.14	725,311.44	32.331093	-103.737701
18,700.00	90.00	359.64	11,820.00	6,907.83	450.41	484,795.14	725,310.81	32.331368	-103.737701
18,800.00	90.00	359.64	11,820.00	7,007.83	449.79	484,895.13	725,310.18	32.331643	-103.737701
18,900.00	90.00	359.64	11,820.00	7,107.83	449.16	484,995.13	725,309.55	32.331918	-103.737701
19,000.00	90.00	359.64	11,820.00	7,207.82	448.53	485,095.13	725,308.93	32.332192	-103.737702
19,100.00	90.00	359.64	11,820.00	7,307.82	447.90	485,195.13	725,308.30	32.332467	-103.737702
19,200.00	90.00	359.64	11,820.00	7,407.82	447.28	485,295.13	725,307.67	32.332742	-103.737702
19,300.00	90.00	359.64	11,820.00	7,507.82	446.65	485,395.12	725,307.05	32.333017	-103.737702
19,400.00	90.00	359.64	11,820.00	7,607.82	446.02	485,495.12	725,306.42	32.333292	-103.737703
19,500.00	90.00	359.64	11,820.00	7,707.81	445.40	485,595.12	725,305.79	32.333567	-103.737703
19,600.00	90.00	359.64	11,820.00	7,807.81	444.77	485,695.12	725,305.16	32.333842	-103.737703
19,700.00	90.00	359.64	11,820.00	7,907.81	444.14	485,795.12	725,304.54	32.334117	-103.737703
19,800.00	90.00	359.64	11,820.00	8,007.81	443.51	485,895.11	725,303.91	32.334391	-103.737703
19,900.00	90.00	359.64	11,820.00	8,107.81	442.89	485,995.11	725,303.28	32.334666	-103.737704
20,000.00	90.00	359.64	11,820.00	8,207.80	442.26	486,095.11	725,302.65	32.334941	-103.737704
20,100.00	90.00	359.64	11,820.00	8,307.80	441.63	486,195.11	725,302.03	32.335216	-103.737704
20,200.00	90.00	359.64	11,820.00	8,407.80	441.00	486,295.10	725,301.40	32.335491	-103.737704
20,300.00	90.00	359.64	11,820.00	8,507.80	440.38	486,395.10	725,300.77	32.335766	-103.737705
20,400.00	90.00	359.64	11,820.00	8,607.80	439.75	486,495.10	725,300.15	32.336041	-103.737705
20,500.00	90.00	359.64	11,820.00	8,707.79	439.12	486,595.10	725,299.52	32.336316	-103.737705
20,600.00	90.00	359.64	11,820.00	8,807.79	438.50	486,695.10	725,298.89	32.336590	-103.737705

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 701H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3513.20ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3513.20ft
Site:	Sec 12-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 12-1 Fed 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,700.00	90.00	359.64	11,820.00	8,907.79	437.87	486,795.09	725,298.26	32.336865	-103.737706
20,800.00	90.00	359.64	11,820.00	9,007.79	437.24	486,895.09	725,297.64	32.337140	-103.737706
20,900.00	90.00	359.64	11,820.00	9,107.79	436.61	486,995.09	725,297.01	32.337415	-103.737706
21,000.00	90.00	359.64	11,820.00	9,207.78	435.99	487,095.09	725,296.38	32.337690	-103.737706
21,100.00	90.00	359.64	11,820.00	9,307.78	435.36	487,195.08	725,295.75	32.337965	-103.737706
21,200.00	90.00	359.64	11,820.00	9,407.78	434.73	487,295.08	725,295.13	32.338240	-103.737707
21,300.00	90.00	359.64	11,820.00	9,507.78	434.10	487,395.08	725,294.50	32.338515	-103.737707
21,400.00	90.00	359.64	11,820.00	9,607.78	433.48	487,495.08	725,293.87	32.338789	-103.737707
21,500.00	90.00	359.64	11,820.00	9,707.77	432.85	487,595.08	725,293.25	32.339064	-103.737707
21,600.00	90.00	359.64	11,820.00	9,807.77	432.22	487,695.07	725,292.62	32.339339	-103.737708
21,700.00	90.00	359.64	11,820.00	9,907.77	431.60	487,795.07	725,291.99	32.339614	-103.737708
21,800.00	90.00	359.64	11,820.00	10,007.77	430.97	487,895.07	725,291.36	32.339889	-103.737708
21,900.00	90.00	359.64	11,820.00	10,107.77	430.34	487,995.07	725,290.74	32.340164	-103.737708
22,000.00	90.00	359.64	11,820.00	10,207.77	429.71	488,095.07	725,290.11	32.340439	-103.737709
22,003.37	90.00	359.64	11,820.00	10,211.14	429.69	488,098.44	725,290.09	32.340448	-103.737709
LTP @ 22003' MD, 100' FNL, 725' FWL									
22,083.36	90.00	359.64	11,820.00	10,291.12	429.19	488,178.42	725,289.59	32.340668	-103.737709
PBHL: 20' FNL, 725' FWL									
22,083.37	90.00	359.64	11,820.00	10,291.13	429.19	488,178.43	725,289.59	32.340668	-103.737709

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL - Tomb Raider 12-	0.00	0.00	0.00	10,291.13	429.19	488,178.43	725,289.59	32.340668	-103.737709
- plan misses target center by 10300.08ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
11,264.99	11,247.04	-200.00	495.00	KOP @ 11265' MD, 50' FSL, 725' FWL	
11,506.13	11,481.13	-150.00	494.69	FTP @ 11506' MD, 100' FSL, 725' FWL	
16,822.00	11,820.00	5,029.87	462.19	Cross Section @ 16822' MD, 0' FSL, 725' FWL	
22,003.37	11,820.00	10,211.14	429.69	LTP @ 22003' MD, 100' FNL, 725' FWL	
22,083.36	11,820.00	10,291.12	429.19	PBHL: 20' FNL, 725' FWL	

Devon Energy

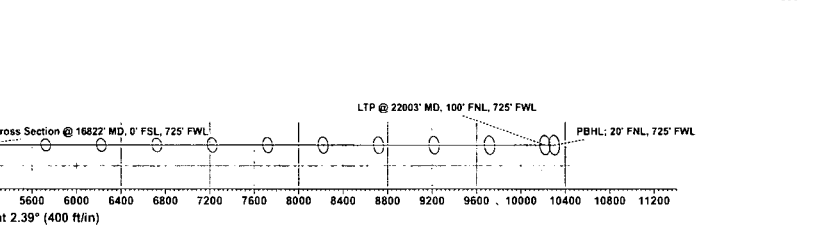
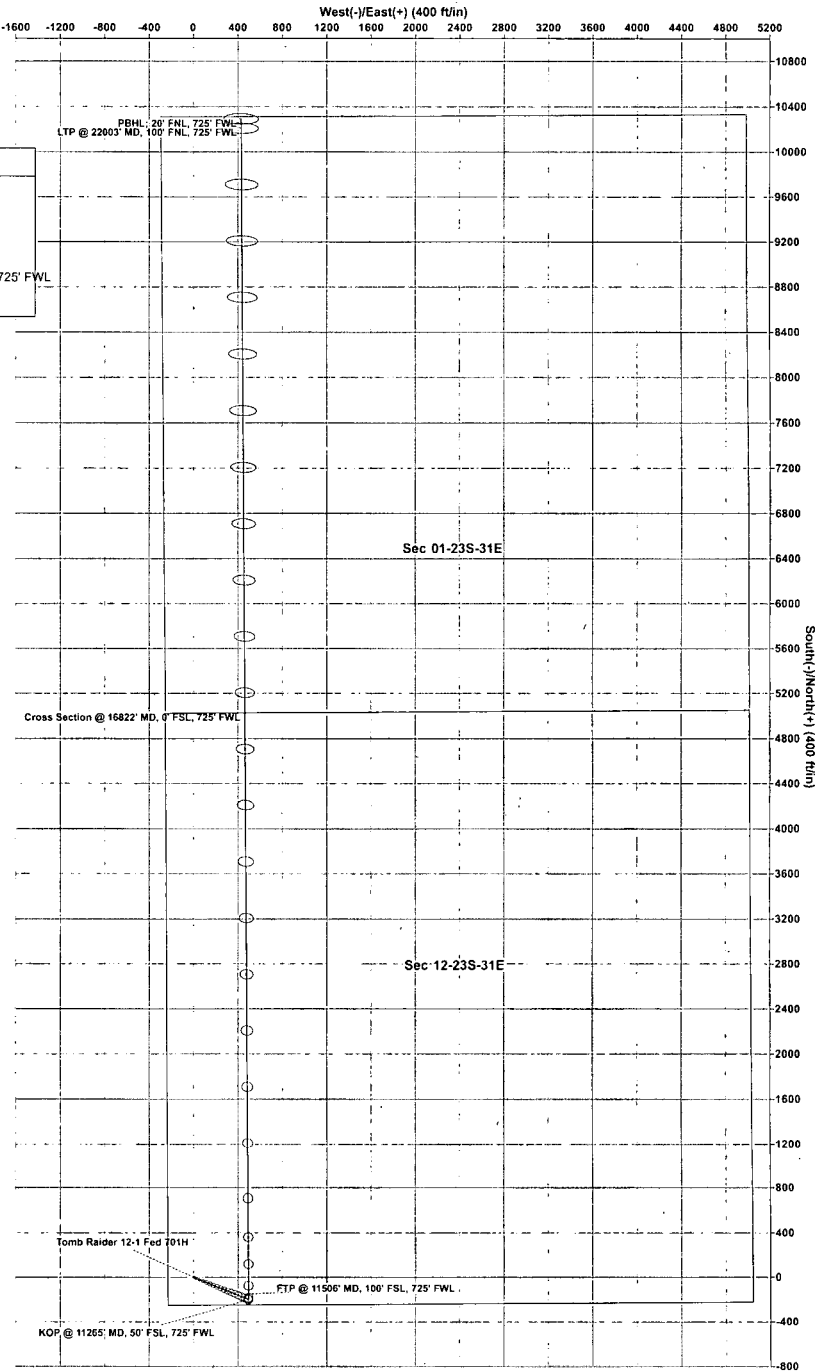
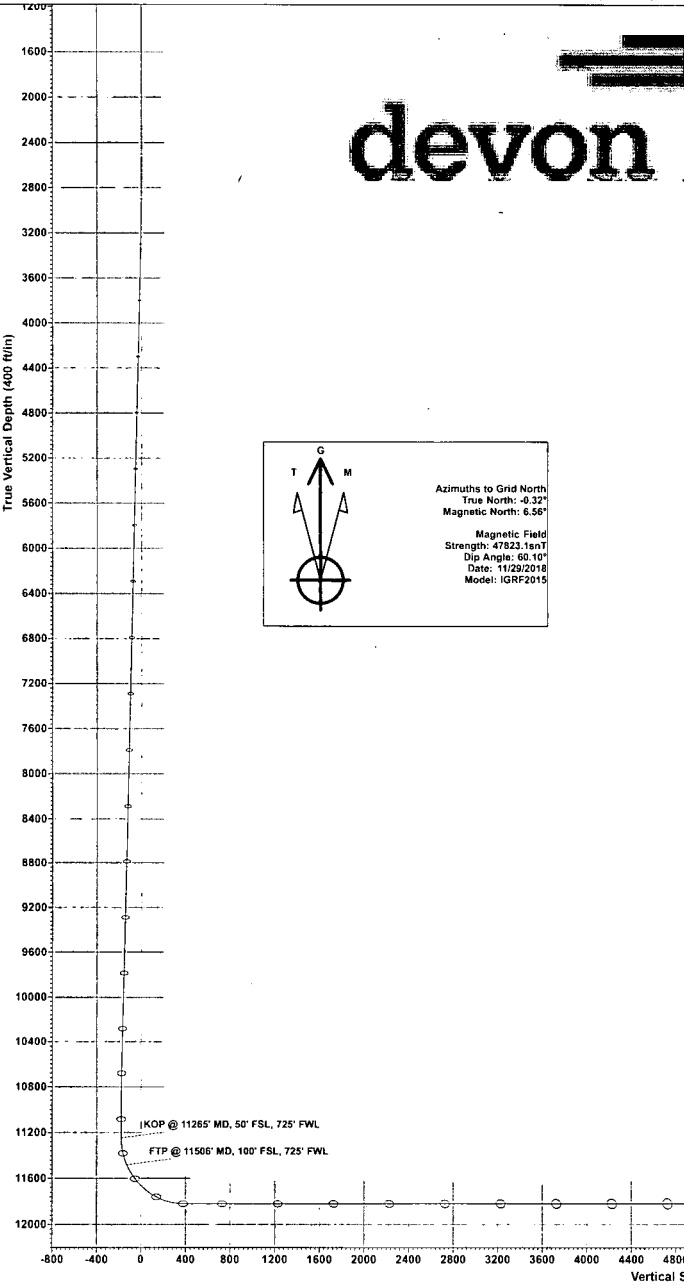
WELL DETAILS: Tomb Raider 12-1 Fed 701H

RKB @ 3513.20ft
3488.20

Northing 477887.32 Easting 724860.40 Latitude 32.312387 Longitude -103.739283

SECTION DETAILS Permit Plan 1

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2750.00	0.00	0.00	2750.00	0.00	0.00	0.00	0.00	
3140.48	3.90	112.00	3140.18	-4.98	12.33	1.00	-4.46	
10654.62	3.90	112.00	10636.88	-196.68	486.78	0.00	-176.22	
5 10914.95	0.00	0.00	10897.00	-200.00	495.00	1.50	-179.20	
6 11264.99	0.00	0.00	11247.04	-200.00	495.00	0.00	-179.20	KOP @ 11265' MD, 50' FSL, 725' FWL
7 12164.99	90.00	359.64	11820.00	372.95	491.41	10.00	393.10	
8 22083.37	90.00	359.64	11820.00	10291.13	429.19	0.00	10300.08	PBHL: 20' FNL, 725' FWL



Tomb Raider 12-1 Fed 701H

1. Geologic Formations

TVD of target	11820	Pilot hole depth	N/A
MD at TD:	22083	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	766		
Salado	1141		
Base of Salt	4451		
Delaware	4481		
L Brushy Canyon	8061		
Bone Spring	8356		
Leonard 'A'	8461		
Leonard 'B'	8976		
Leonard 'C'	9171		
1st BSPG Sand	9421		
2nd BSPG Sand	9981		
3rd BSPG Lime	10496		
3rd BSPG Sand	11206		
Wolfcamp	11651		
Wolfcamp 100	11780		
LP	11820		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

Tomb Raider 12-1 Fed 701H

2. Casing Program (Primary Design)

Hole Size	Casing Interval		Csg. Size	Wt (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
14.75"	0	791	10.75"	40.5	J-55	STC	1.125	1.25	1.6
9.875"	0	11231	7.625"	29.7	P110	BTC	1.125	1.25	1.6
6.75"	0	TD	5.5"	20	P110	Vam SG	1.125	1.25	1.6
BLM Minimum Safety Factor							1.125	1.00	1.6 Dry 1.8 Wet

- All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h Must have table for contingency casing
- Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
- Int casing shoe will be selected based on drilling data / gamma, setting depth with be revised accordingly if needed.
- A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.

Casing Program (Alternate Design)

Hole Size	Casing Interval		Csg. Size	Wt. (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
17.5"	0	Same as above	13.375"	48	H-40	STC	1.125	1.25	1.6
10.625"	0	Same as above	8.625"	32	P110EC	BTC	1.125	1.25	1.6
7.875"	0	TD	5.5"	17	P110	BTC	1.125	1.25	1.6
BLM Minimum Safety Factor							1.125	1.00	1.6 Dry 1.8 Wet

- All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h Must have table for contingency casing
- Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
- Int 1 casing shoe will be selected based on drilling data / gamma, setting depth with be revised accordingly if needed.
- If 9.875" hole is drilled for intermediate 1, the 8.625" connection will change from BTC to TLW
- A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.
- Variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing. No losses are expected in subsequent hole section.

Tomb Raider 12-1 Fed 701H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Tomb Raider 12-1 Fed 701H

3. Cementing Program (Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft ³ /sack)	Slurry Description
Surface	513	Surf	13.2	1.33	Lead: Class C Cement + additives
Int 1	1067	Surf	9	3.31	Lead: Class C Cement + additives
	847	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	540	Surf	9	3.31	1 st stage Lead: Class C Cement + additives
	55	500' above shoe	13.2	1.33	1 st stage Tail: Class H / C + additives
	560	Surf	9	3.31	2 nd stage Lead: Class C Cement + additives
	55	500' above DV	13.2	1.33	2 nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.33	Squeeze Lead: Class C Cement + additives
	1067	Surf	9	3.31	Lead: Class C Cement + additives
	847	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Production	1541	500' tieback	13.2	1.33	Lead: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

Tomb Raider 12-1 Fed 701H

Cementing Program (Alternate Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	660	Surf	13.2	1.33	Lead: Class C Cement + additives
Int 1	1147	Surf	9	3.31	Lead: Class C Cement + additives
	831	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	580	Surf	9	3.31	1 st stage Lead: Class C Cement + additives
	55	500' above shoe	13.2	1.33	1 st stage Tail: Class H / C + additives
	590	Surf	9	3.31	2 nd stage Lead: Class C Cement + additives
	55	500' above DV	13.2	1.33	2 nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.33	Squeeze Lead: Class C Cement + additives
	1147	Surf	9	3.31	Lead: Class C Cement + additives
	831	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Production	3161	500' tieback	13.2	1.33	Lead: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

Tomb Raider 12-1 Fed 701H

4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?		Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	5M	Annular		X	50% of rated working pressure
			Blind Ram		X	5M
			Pipe Ram			
			Double Ram		X	
			Other*			
Production	13-5/8"	10M	Annular (5M)		X	100% of rated working pressure
			Blind Ram		X	10M
			Pipe Ram			
			Double Ram		X	
			Other*			
			Annular			
			Blind Ram			
			Pipe Ram			
			Double Ram			
			Other*			
N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					

Tomb Raider 12-1 Fed 701H

5. Mud Program (3 String Design)

Section	Type	Weight (ppg)	Vis	Water Loss
Surface	FW Gel	8.5 - 9	28-34	N/C
Intermediate	DBE / Cut Brine	9 - 10	28-34	N/C
Production	OBM	10-10.5	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
---	-----------------------------

6. Logging and Testing Procedures

Logging, Coring and Testing.

x	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned	Interval
Resistivity	Int. shoe to KOP
Density	Int. shoe to KOP
X CBL	Production casing
X Mud log	Intermediate shoe to TD
PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	6454 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N	H ₂ S is present
Y	H ₂ S Plan attached

Tomb Raider 12-1 Fed 701H

8. Other facets of operation

Is this a walking operation? Potentially

1. If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2. The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3. The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

1. Spudder rig will move in and drill surface hole.
 - a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
4. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5. Spudder rig operations is expected to take 4-5 days per well on a multi well pad.
6. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
 - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

- ☒ Directional Plan
☐ Other, describe

Devon Energy
APD VARIANCE DATA

OPERATOR NAME: Devon Energy

1. SUMMARY OF Variance:

Devon Energy respectfully requests approval for the following additions to the drilling plan:

1. Potential utilization of a spudder rig to pre-set surface casing.

2. Description of Operations

1. A spudder rig contractor may move in their rig to drill the surface hole section and pre-set surface casing on this well.
 - a. After drilling the surface hole section, the rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
 - b. Rig will utilize fresh water based mud to drill surface hole to TD.
2. The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
3. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wingvalves.
 - a. A means for intervention will be maintained while the drilling rig is not over the well.
4. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
5. Drilling operation will be performed with the big rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
 - a. The BLM will be contacted / notified 24 hours before the big rig moves back on to the pad with the pre-set surface casing.
6. Devon Energy will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
7. Once the rig is removed, Devon Energy will secure the wellhead area by placing a guard rail around the cellar area.

CASING PERFORMANCE Data Sheet



O.D.	PE LB/FT	T&C LB/FT	GRADE
8.625	31.13	32.00	P110EC

Grade - Material Properties

Minimum Yield Strength:	125	ksi
Maximum Yield Strength:	140	ksi
Minimum Tensile Strength:	135	ksi

Pipe Body Data (PE)

Geometry

Nominal ID:	7.921	inch
Wall:	0.352	inch
Min. Wall % (API = 87.5%):	87.5	%
API Drift:	7.796	inch
Special Drift*:	7.875	inch

Performance

Pipe Body Yield Strength:	1,144	kip
Collapse Resistance:	3,470	psi
Internal Yield Pressure (<i>API Historical</i>):	8,930	psi

API Connection Data

SC Internal Pressure:	8,930	psi
SC Joint Strength:	793	kip
LC Internal Pressure:	8,930	psi
LC Joint Strength:	887	kip
BC Internal Pressure:	8,930	psi
BC Joint Strength:	1,121	kip

SC Torque (ft-lbs)

minimum: 5,950	optimum: 7,933	maximum: 9,916
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LC Torque (ft-lbs)

minimum: 6,651	optimum: 8,868	maximum: 11,085
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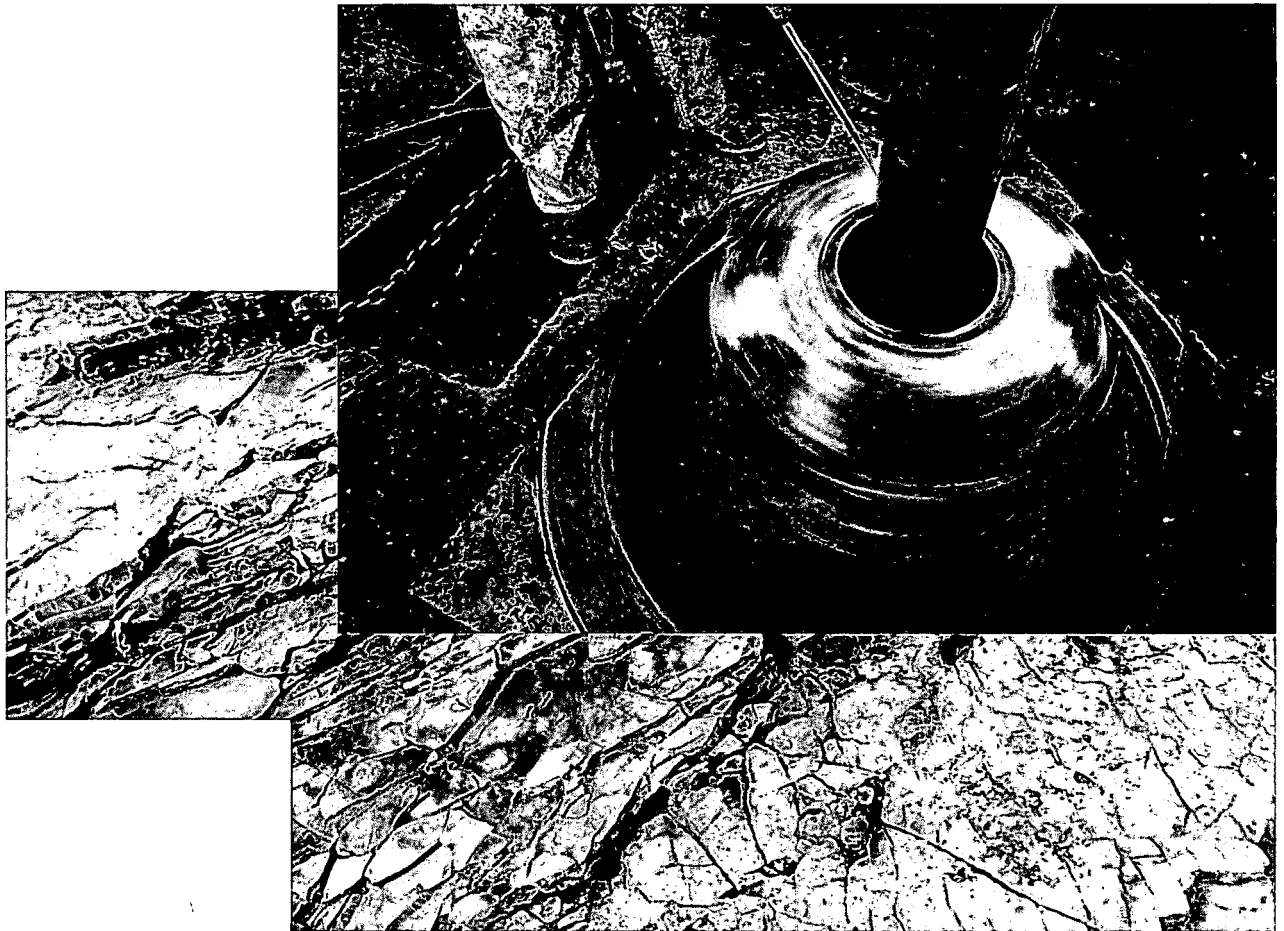
*Special drift must be ordered or API drift will be used for actual drifting of product.

**If above API connections do not suit your needs, VAM® premium connections are available up to 100% of pipe body ratings.

This data sheet is for informational purposes only. While every effort has been made to ensure the accuracy of all data and that the information contained herein is correct, this material is presented as a reference guide only. Vallourec assumes no responsibility for the results obtained through the use of this material.



Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

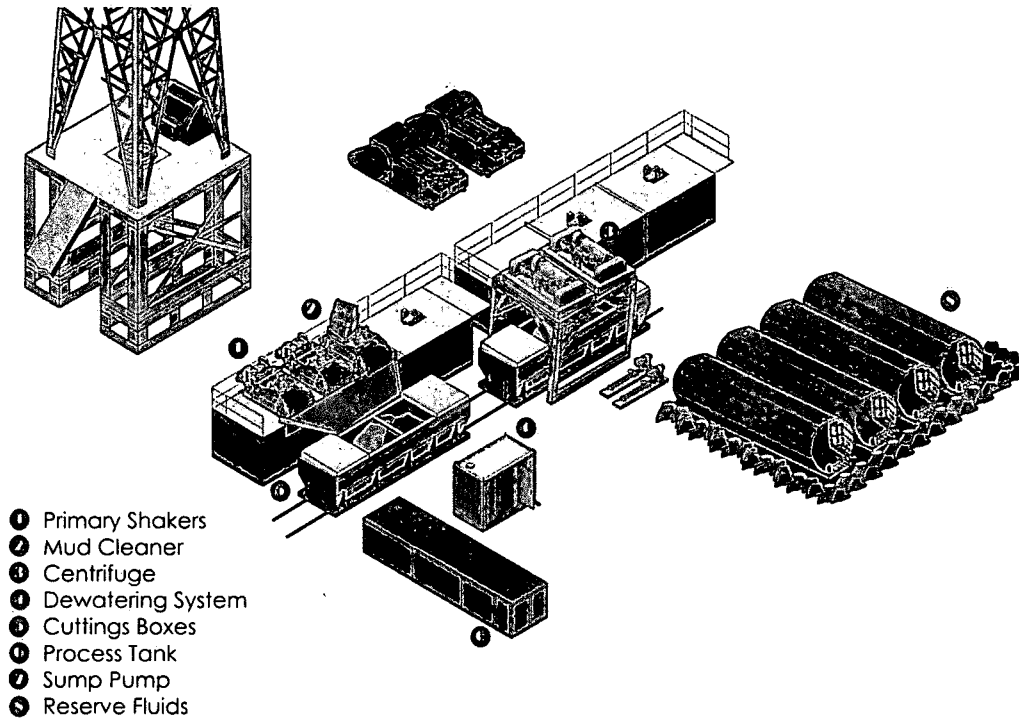
II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Closed Loop Schematic



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.

- Wellhead will be installed by wellhead representatives.
- If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- Wellhead representative will install the test plug for the initial BOP test.
- Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 5M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time.
- If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted.
- Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.
- Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.

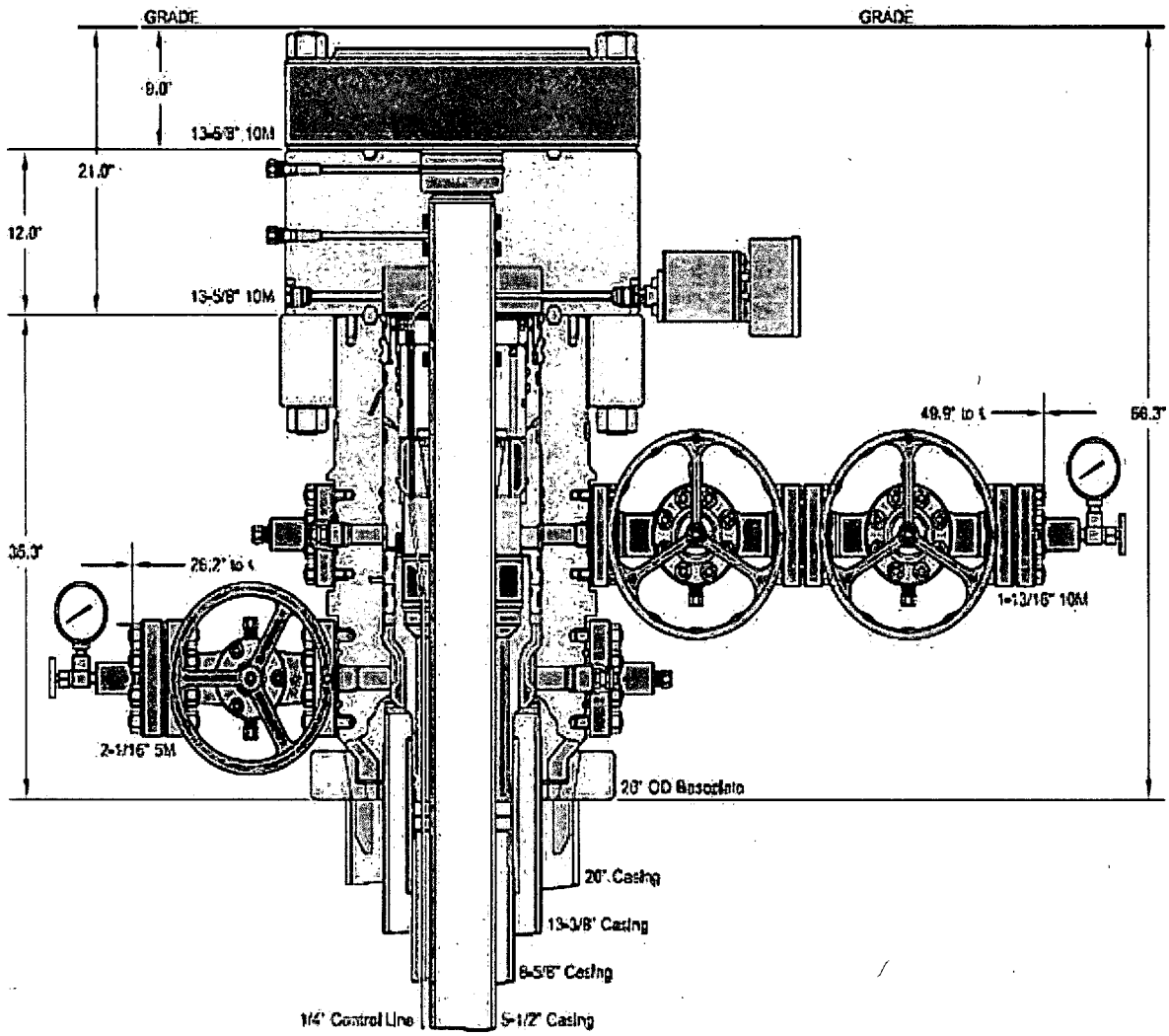
After running the surface casing, a BOP/BOPE system with a minimum rating of 5M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 5,000 psi high pressure test. The 5,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.

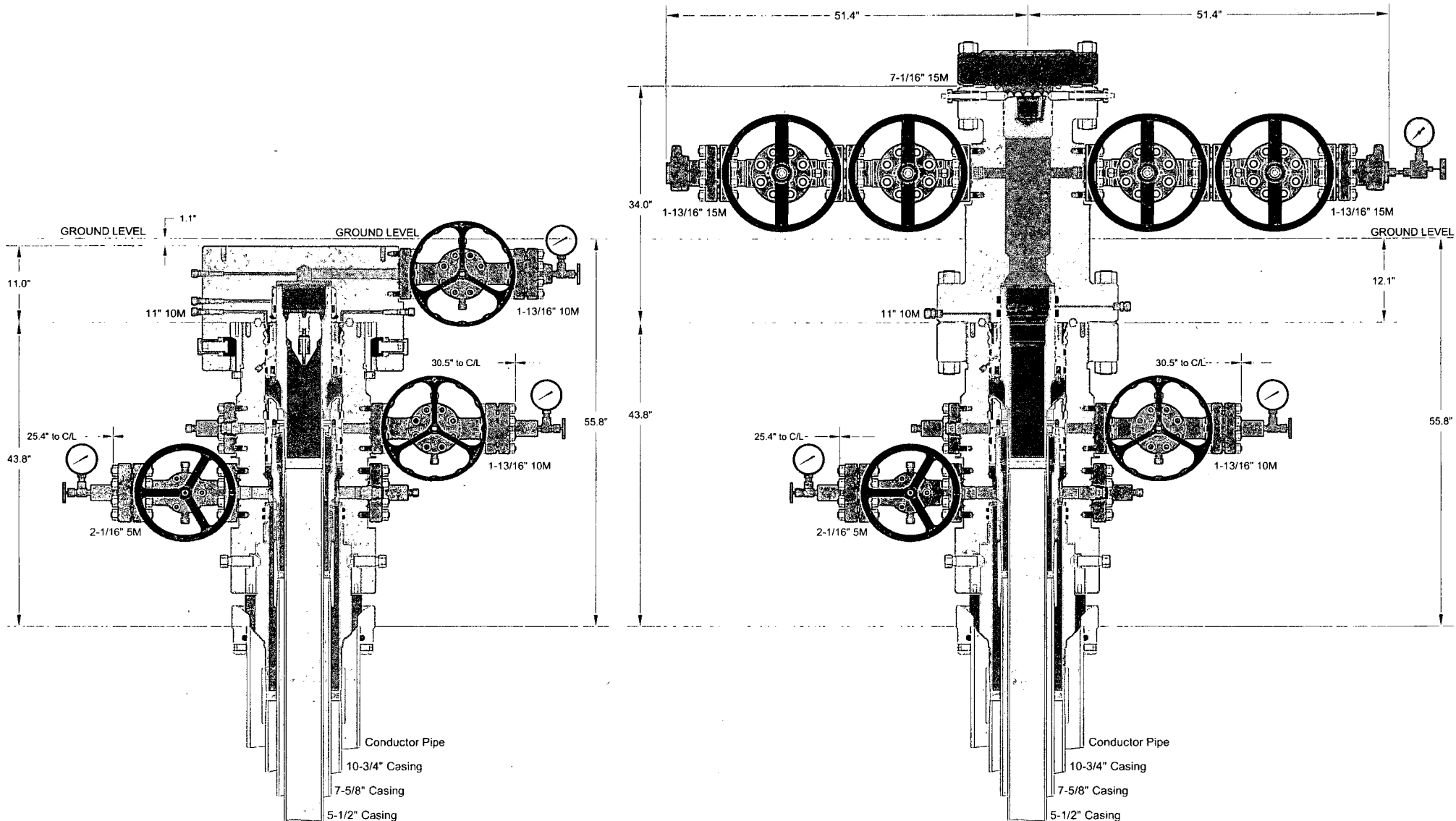
After running the intermediate casing with a mandrel hanger, the BOP/BOPE system with a minimum rating of 10M will already be installed on the wellhead.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 5,000 psi WP.

Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron.

MB Verb 5M WLFMP Alt Design





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ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

DEVON ENERGY CORPORATION

10-3/4" x 7-5/8" x 5-1/2" 5M MBU-T-CFL-R-DBLO Wellhead System
With 7-5/8" & 5-1/2" Pin Down Rotating Mandrel Hangers,
13-5/8" 5M x 11" 10M DSPA & 11" 10M x 7-1/16" 15M Tubing Head

DRAWN

DLE

20NOV18

APPRV

DRAWING NO.

ODE0001804



Quotation

Quote Number : ODE0001804

ODESSA WAREHOUSE
8001 GROENING STREET
ODESSA TX 79765
Phone: 432-653-0306

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Bill To: 7323

DEVON ENERGY CORPORATION
PO BOX 3198
OKLAHOMA CITY OK 73101-3198
US

Ship To: 0

DEVON ENERGY CORPORATION
PO BOX 3198
OKLAHOMA CITY OK 73101-3198
US

Quantity	Price	Ext Price
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MBU-T-CFL-R 10-3/4"		
DEVON ENERGY		

DELAWARE BASIN

MBU-T-CFL-R ASSEMBLY
10-3/4" X 7-5/8" X 5-1/2"

QUOTATION SUMMARY:

- MBU-T ASSEMBLY - \$24,148.80
- MANDREL HANGERS & PACKOFFS - \$18,231.00
- TUBING HEAD ASSEMBLY - \$28,243.20
- RENTAL TOOLS = \$4,075.00 PER WELL FOR THE FIRST 45 DAYS; \$220.00 PER DAY THEREAFTER

CACTUS CONTACT:
SCOTT NORDQUIST
MOBILE: 832.803.5055
EMAIL: scott.nordquist@cactuswellhead.com

NOTE: PRICES ARE F.O.B. CACTUS BOSSIER CITY, LA. THE FOLLOWING QUOTATION DOES NOT INCLUDE PRO RATA FREIGHT AND OTHER APPLICABLE MILEAGE AND SERVICES THAT WILL BE CHARGED AT TIME OF INVOICING.



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		Quantity	Price	Ext Price
MBU-T-CFL-R ASSEMBLY				
1	125867	1.00		
	HSG,CW,MBU-T-CFL-R-DBLO-SF,10-3/4,11 10M,W/2 1-13/16 10M FP UPR & 2 2-1/16 5M FP LWR,RND BAR,W/O 11 10M THD FLG,6A-PU-EE-NL-1-2			
2	103030	1.00		
	FLG,THD,11 10M W/17.375-2 STUB ACME-2G L.H. THD,4130 75K & I/T -75 DEG F,PSL2			
3	101970	1.00		
	LANDING RING,CW,CTF,16 CSG X 20 OD X 15.25 ID,W/1/2-13UNC-2B LIFT HOLE			
4	117696	1.00		
	CSGHGR,CW,MBU-T-CFL-R,10-3/4,10-3/4 (45.5#) BC PIN BTM X 11.250-4 STUB ACME-2G LEFT HAND PIN TOP,9.945 MIN BORE,4140 110K,6A-U-AA-1-2			
5	125819	0.00		
	CSGHGR,CW,MBU-T-CFL-R,10-3/4,10-3/4 (45.5#) BC PIN BTM X 11.250-4 STUB ACME-2G LEFT HAND PIN TOP,9.945 MIN BORE,4130 75K,6A-PU-DD-NL-1-2			
6	VR2	1.00		
	VR PLUG,CW,1-1/2 (1.900) SHARP VEE X 1-1/4 HEX,API 6A-DD-NL			
7	610003N	1.00		
	VLV,CW1,2-1/16 3/5M FE AA/DD-NL (API 6A LU AA/DD-NL PSL1 PR2) NON-MONOGRAMMED			
8	200002	2.00		
	FLG,COMP,CW,2-1/16 5M X 2 LP,6A-KU-EE-NL-1			
9	BP2T	2.00		
	BULL PLUG,CW,2 LP X 1/2 LP,API 6A DD-NL			
10	FTG1	1.00		
	FTG,GRS,VENTED CAP,1/2 NPT,ALLOY NON-NACE			
11	R24	3.00		
	RING GASKET,R24,2-1/16 3/5M			
12	780067	8.00		
	STUD,ALL-THD W/2 NUTS,BLK,7/8-9UNC X 6-1/2,A193 GR B7/A194 GR 2H,NO PLATING			
13	NVA	1.00		
	NEEDLE VALVE,MFA,1/2 10M			
14	PG5M	1.00		
	PRESSURE GAUGE,5M,4-1/2 FACE,LIQUID FILLED,1/2 NPT			
15	VR1	1.00		
	VR PLUG,CW,1-1/4 (1.660) LP X 1-1/4 HEX,API 6A-DD-NL			
16	FTG1	1.00		
	FTG,GRS,VENTED CAP,1/2 NPT,ALLOY NON-NACE			
17	107412	1.00		
	VLV,CW,SB100,1-13/16 10M FE BB/EE-0,5 (API 6A LU BB/EE-0,5 PSL3 PR2) QPQ TRIM, API 6A PR2 ANNEX F			



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		Quantity	Price	Ext Price
18	200010 FLG,COMP,1-13/16 10M X 2 LP,5000 PSI MAX WP,4130 60K,6A-KU-EE-NL-1	2.00	74.33	148.66
19	BX151 RING GASKET,BX151,1-13/16 10/15/20M	3.00		
20	780080 STUD,ALL-THD W/2 NUTS,BLK,3/4-10UNC X 5-1/2,A193 GR B7/A194 GR 2H,NO PLATING	8.00		
21	BP2T BULL PLUG,CW,2 LP X 1/2 LP,API 6A DD-NL	2.00		
22	NVA NEEDLE VALVE,MFA,1/2 10M	1.00		
23	PG5M PRESSURE GAUGE,5M,4-1/2 FACE,LIQUID FILLED,1/2 NPT	1.00		

CASING HANGERS & PACKOFFS

24	120272 CSGHGR,CW,MBU-LR2-TP6,FLUTED,11 X 7-5/8 (29.7#) BC PIN BTM X 7.750-4 STUB ACME-2G RIGHT HAND BOX TOP,6A-U-AA-1-1	1.00		
25	108908T PACKOFF,CW,MBU-LR,MANDREL,11 10M NOM,W/7.500-4 STUB ACME-2G LH BOX TOP,A/F LANDING HGR NECK,6A-U-AA-1-1	1.00		
26	121451 CSGHGR,CW,MBU-LR-UPR-TP8,SN,FLUTED,7-5/8,11 X 5-1/2 (20#) VAM TOP HT PIN BTM X 6.125 4 STUB ACME-2G RIGHT HAND BOX TOP,W/5 HBPV THD,SPEC FOR ROTATING CASING STRING,,6A-U-AA-1-2	1.00		
27	120079 PACKOFF,CW,CTF-MBU-3T,11,A/F 7.75 SEAL PREP,W/8.750-4 STUB ACME-2G LH BOX TOP,10000 PSI MAX WP,A/F LANDING ON 45 DEG SHOULDER ON HANGER,6A-U-AA-2-2	1.00		
28	BPV5T BPV,H,5 ONE WAY,4130,HYDRO TESTED & API 6A MONOGRAM	0.00		

NOTE:

OPTIONAL SALE ITEM; PRICE NOT INCLUDED IN TOTAL

OPTIONAL RENTAL RATE = \$90.00 PER DAY

RENTAL TOOLS

29	RNM	Rental Charge Minimum	1.00
MBU-T RENTAL TOOLS = \$4,075.00 PER WELL FOR THE FIRST 45 DAYS; \$220.00 PER DAY THEREAFTER.			

RENTAL TOOLS INCLUDE THE FOLLOWING ITEMS:

PN 119126 - LIFT RING,CSGHGR,CFL-R,W/14.000-2 STUB ACME-2G LEFT HAND THDS,4140 110K (\$200.00; \$10.00)

PN 120868: RUN TOOL,CW,CSGHGR,MBU-T-CFL-10-7/8,11.250-4 STUB ACME-2G LH BOX BTM X 10-3/4 BC BOX



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	Quantity	Price	Ext Price
TOP,W/10.00 MIN BORE,MAX LOAD CAPACITY 1500K (\$200.00; \$10.00)			
PN 117695: TORQUE COLLAR,CW,CSGHGR,CFL,F/13-3/8 NECK,4140 110K (\$100.00; \$5.00)			
PN 800001: COMB TEST PLUG/RET TOOL,CW,11 X 4-1/2 IF (NC50) BOX BTM & TOP,W/1-1/4 LP BYPASS & SPRING LOADED DOGS (\$250.00; \$15.00)			
PN 102332: WBUSH,CW,MBU-LR,LWR,11 X 10.00 ID X 25.00 LG (\$250.00; \$15.00)			
PN 120274: RUN TOOL,CW,CSGHGR,TP6,7.750-4 STUB ACME-2G RIGHT HAND PIN BTM X 7-5/8 BC BOX TOP,W/6.535 MIN BORE & MAXIMUM TORQUE 25000 LBS-FT SPEC FOR ROTATING CASING STRING (\$575.00;\$30.00)			
PN 117945: TORQUE COLLAR,CW,F/USE W RUN TOOL,TP,7.750-4 STUB ACME-2G RIGHT HAND PIN BTM AND A/F 9.00 OD X 5.00 LG BOX CSGHGR NECK,MAXIMUM TORQUE 25000 LBF-FT (\$200.00; \$10.00)			
PN 103066: WASH TOOL,CW,CSGHGR,MBU-LR/MBS(2),FLUTED,11 X 4-1/2 IF (NC50) BOX TOP THDS,FAB (\$400.00; \$20.00)			
PN 102479: RUN TOOL,CW,PACKOFF,MBU-LR-LWR,11 X 4-1/2 IF (NC50) BTM & TOP,W/7.500-4 STUB ACME-2G LH PIN BTM (\$300.00; \$15.00)			
PN 102172: WBUSH,CW,CTH/MBS2-UPR,11 X 7.0 ID X 13.5 LG (\$250.00; \$15.00)			
PN 118739: RUN TOOL,CW,CSGHGR,TP8,6.125-4 STUB ACME-2G RIGHT HAND PIN BTM X 5-1/2 (20#) VAM TOP HT BOX TOP,W/4.696 MIN BORE & MAX LOAD CAPACITY 500K,MAX TORQUE 23000 FT-LBS,SPEC FOR ROTATING CASING STRING,4140 110K (\$550.00; \$30.00)			
PN 103164: WASH TOOL,CW,CSGHGR,MBU-2LR/MBS2-R (3T),FLUTED,11 X 4-1/2 IF (NC50) BOX TOP THDS,FAB (\$250.00; \$15.00)			
PN 115167: RUN TOOL,CW,PACKOFF,CTF-SN,7-5/8,W/8.750-4 STUB ACME-2G LEFT HAND PIN BTM X 4-1/2 IF (NC50) BOX TOP,W/BALL BEARINGS (\$275.00; \$15.00)			
PN 102045: RUN TOOL,PACKOFF,CW,CTF,11 X 4-1/2 IF (NC50),W/5 HBPV MALE THD (\$275.00; \$15.00)			
NOTE: CUSTOMER RESPONSIBLE FOR REPAIRS AND LOST, DAMAGED, OR BEYOND REPAIR TOOLS. RENTAL CHARGES MAY NOT BE APPLIED TO THE PURCHASE PRICE OF EQUIPMENT.			
30	RNM	Rental Charge Minimum	0.00
11 10M TA CAP RENTAL = \$1,500.00 PER WELL FOR THE FIRST 45 DAYS; \$65.00 PER DAY THEREAFTER.			
RENTAL CONSISTS OF THE FOLLOWING ITEMS:			
PN 121517: TA CAP,CW,DBLHPS,7-5/8,11 10M FLG,W/2 LP OUTLET,F/5.75 CUTOFF,5000 PSI MAX WP,6A-PU-EE-NL-1-1			

NOTE: CUSTOMER RESPONSIBLE FOR LOST, DAMAGED OR BEYOND REPAIR RENTAL TOOLS. RENTAL CHARGES MAY NOT BE APPLIED TO THE PURCHASE PRICE OF EQUIPMENT.



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		Quantity	Price	Ext Price
TUBING HEAD ASSEMBLY				
31	123779	1.00		
	TBGHD,CW,CTH-DBLHPS-SB,7-5/8,11 10M X 7-1/16 15M,W/2 1-13/16 15M FP,ACME VR THD,5.13 MIN BORE & 17-4PH LDS,34.0 LG,RND BAR,6A-PU-EE-0,5-1-2			
32	104700	4.00		
	VLV,DSG-22,1-13/16 15M FE EE-0,5 (6A PU EE-0,5 PSL3 PR1),QPQ TRIM			
33	100203	2.00		
	ADPT,TS,FH,1-13/16 15M X 2 FIG 1502 X 9/16 AUTOCLAVE,NON-NACE (INCLUDES SEAL RING) FH25099462-3			
34	100048	1.00		
	FTG,GRS,VENTED CAP,1/2 NPT,4140 -50F W/ELECTROLESS NICKEL COATING NACE,K-MONEL BALL,INCONEL X-750 SPRING			
35	BX151	6.00		
	RING GASKET,BX151,1-13/16 10/15/20M			
36	105477	32.00		
	STUD,ALL-THD W/2 NUTS,BLK,7/8-9UNC X 6,A193 GR B7/A194 GR 2H,NO PLATING			
37	BX158	1.00		
	RING GASKET,BX158,11 10/15/20M			
38	780083	16.00		
	STUD,ALL-THD W/2 NUTS,BLK,1-3/4-8UN X 15-1/4,A193 GR B7/A194 GR 2H,NO PLATING			
39	810023	1.00		
	NEEDLE VALVE,2 WAY ANGLE,9/16,20KSI,SOUR SERVICE,W/O COLLARS & GLANDS			
40	106012	1.00		
	ADPT,AUTOCLAVE,HIGH PRESSURE, 9/16 MALE TO 9/16 MALE,316SS			
41	PG15M	1.00		
	PRESSURE GAUGE,15M,9/16 AUTOCLAVE,LIQUID FILLED			
CONTINGENCY EQUIPMENT				
EMERGENCY EQUIPMENT; INVOICED AS REQUIRED				
42	102470	0.00		
	CSGHGR,CW,MBU-LR,11 X 7-5/8,6A-PU-DD-3-1			
43	102472	0.00		
	PACKOFF,CW,MBU-LR,EMERG,11 10M X 7-5/8,W/7.500-4 STUB ACME-2G LH BOX TOP,6A-U-AA-1-1			
44	102474	0.00		
	CSGHGR,CW,MBU-LR,UPR,11 X 5-1/2,6A-PU-DD-3-1			
45	115873	0.00		
	PACKOFF,CW,CTF-SN,7-5/8,11 X 5-1/2,EMERG,W/5 HBPV BOX THD & 4.93 MIN BORE,10000 PSI MAX WP,4140 80K,6A-U-DD-NL-2-2 (REF115873)			



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Quantity	Price	Ext Price
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NOTE: MUST USE RX RING GASKET

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For Acceptance of this Quotation
Please Contact Ph: 713-626-8800
sales@cactuswellhead.com

Matl:
Labor:
Misc:
Sales Tax: _____
Total: _____



Quotation

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CACTUS WELLHEAD, LLC PURCHASE TERMS AND CONDITIONS

1. **ACCEPTANCE:** Acceptance of Cactus Wellhead, LLC (herein: Company) Purchase Terms and Conditions (herein: CACTUS Purchase Terms) shall be deemed effective upon shipment of the goods and/or rendering of services which are the subject of an order by Customer (defined as the party purchasing CACTUS goods and/or services referred to on the invoice). Any proposal made by Customer for additional or different terms and conditions or any attempt by Purchaser to vary in any degree any of the terms and conditions of CACTUS Purchase Terms is hereby rejected. **TO THE EXTENT A PART OF A PROVISION EXCLUSIVELY APPLIES TO GOODS OR SERVICES AND THESE TERMS DOES NOT REQUEST OR CONTEMPLATE SUCH, THE PROVISION DOES NOT APPLY.**
2. **Pricing.** Each Product and Service shall be invoiced at (and Customer shall pay) the respective price shown on the reverse side hereof, or if no price is shown on the reverse side hereof, at the price shown in the current price list of Company. In addition, Customer shall pay any and all additional charges for mileage, transportation, freight, packing and other related charges, as well as any federal, state or local tax, excise, or charge applicable on the sale, transportation, or use of Products and Services, unless otherwise specified.
3. **Terms of Payment.** Customer agrees to pay Company any and all payments due on or before thirty (30) days from invoice date at the designated address of Company. Amounts unpaid after such thirty (30) day period shall bear interest at the lesser of (i) one and one-half percent (1½%) per month or (ii) the maximum rate allowed by law. Customer shall also pay any and all of Company's attorney's fees and court costs if any amounts hereunder are collected by an attorney or through legal proceedings. Company reserves the right, among other remedies, either to terminate this agreement or to suspend further deliveries upon failure of Customer to make any payment as provided herein.
4. **Limited Warranty.** COMPANY MAKES NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE MERCHANTABILITY, FITNESS FOR PURPOSE, DESCRIPTION, QUALITY, PRODUCTIVENESS, ACCURACY OR ANY OTHER MATTER WITH RESPECT TO PRODUCTS OR SERVICES, ALL SUCH WARRANTIES BEING HEREBY SPECIFICALLY AND EXPRESSLY DISCLAIMED BY COMPANY. COMPANY MAY OFFER TECHNICAL ADVICE OR ASSISTANCE WITH REGARD TO THE PRODUCTS AND SERVICES BASED ON LABORATORY AND/OR FIELD EXPERIENCE AND CUSTOMER UNDERSTANDS AND AGREES THAT SUCH ADVICE REPRESENTS ONLY GOOD FAITH OPINIONS AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE. THE SOLE AND EXPRESS WARRANTY PROVIDED BY COMPANY IS TO WARRANT THAT THE PRODUCTS SOLD AS LISTED ON THE REVERSE SIDE HEREOF COMPLIES WITH COMPANY'S SOLE SPECIFICATION AT THE DATE AND TIME OF MANUFACTURE. COMPANY MAKES NO WARRANTY THAT SUCH PRODUCTS SHALL MEET SUCH SPECIFICATION AT ANY TIME AFTER SHIPMENT OF PRODUCTS. USE OF SUCH PRODUCTS IS SPECIFICALLY NOT WARRANTED.
5. **Remedy.** The exclusive remedy for this warranty for products shall be limited to, in Company's sole discretion and judgment, the replacement of defective part(s), F.O.B. Company's plant (transportation, redesign, dismantling, disposal of material and installation are not included and shall be borne and paid for by Customer), or repair of defective part(s). The exclusive remedy for this warranty for service shall be limited to, in Company's sole discretion and judgment, the repeat of services performed. F.O.B. Company's plant (transportation, redesign, dismantling, disposal of material and installation are not included and shall be borne and paid for by Customer). Any such repeat of services or replacement or repair of goods shall not include any materials not sold by Company hereunder, and specifically excludes any obligation by Company related to other property of the Customer or any property of third parties. Provided, however, Company may in its sole discretion, decide to instead give Customer credit memorandum for the amounts already paid by Customer to Company for such product or service. **IN ANY EVENT AND NOTWITHSTANDING THE LANGUAGE TO THE CONTRARY HEREIN, CUSTOMER ACKNOWLEDGES THAT ANY CLAIM IT MAY HAVE ARISING OUT OF OR IN CONNECTION WITH ANY ORIGINAL PRODUCTS AND SERVICES, ANY REPLACEMENT PRODUCTS OR REPEAT OF SERVICES AND THESE TERMS AND CONDITIONS SHALL BE LIMITED TO AND NOT EXCEED THE AMOUNT CUSTOMER HAS ACTUALLY PAID TO COMPANY FOR SUCH PRODUCTS AND/OR SERVICES PURSUANT HERETO.** If Customer fails to make any such claim within thirty (30) days after completion of Service or delivery of Product, Customer hereby waives (to the extent permitted by applicable law) any and all claims it may or does have with respect to such Products and Services. **Unless Customer is an authorized reseller of Company, Company's liability in connection with Products and Services shall extend only to Customer. CUSTOMER HEREBY INDEMNIFIES AND HOLDS COMPANY (AND ITS AGENTS, REPRESENTATIVES, OFFICERS DIRECTORS AND EMPLOYEES) HARMLESS FOR ANY LOSS, EXPENSE OR DAMAGE (WHETHER OF CUSTOMER OR OF ANY THIRD PARTY) ARISING FROM OR IN CONNECTION WITH PRODUCTS AND SERVICES, INCLUDING WITHOUT LIMITATION ANY FAILURE OF SUCH PRODUCTS AND SERVICES TO CONFORM TO CUSTOMER'S ORDER OR SPECIFICATION OR ANY OTHER STANDARD, OR ANY NEGLIGENCE OR BREACH OF WARRANTY BY COMPANY WITH RESPECT TO ANYTHING DONE OR FAILED TO HAVE BEEN DONE BY COMPANY, IF AND TO THE EXTENT THAT SUCH LOSS, EXPENSE OR DAMAGE EXCEEDS THE AMOUNT CUSTOMER HAS ACTUALLY PAID COMPANY PURSUANT HERETO FOR SUCH PRODUCTS OR SERVICES.**
6. **Inspection.** The results of any inspection or testing reported by the Company to Customer represents only good faith opinions and are not to be construed as warranties or guarantees of the quality, classification, merchantability, fitness for purpose, condition, or liability of any equipment or material that has been inspected or tested by the Company.
7. **Insurance.** Each party agrees to maintain comprehensive general liability insurance in the amount of \$1,000,000 each occurrence, \$2,000,000 general aggregate, and Workers Compensation insurance per statutory requirements providing coverage for the indemnity obligations in this agreement. The Company (and such of its affiliates as it shall designate) including their officers, directors, members, shareholders, partners, joint ventures, employees, agents and representatives shall be named as additional insureds under the policies of Customer on a primary basis to the extent of its indemnification obligations set forth in these Terms and Conditions, and the policies shall also provide a waiver of subrogation rights in favor of the Company (and such of its affiliates as it shall designate) and their officers, directors, members, shareholders, employees, agents and representatives. The provisions of this Section 6 shall apply and the obligation to maintain insurance of each party in the coverages and amounts set forth herein shall remain in force regardless and independent of the validity or enforceability of the indemnity provisions of Section 7, below; the obligation to obtain insurance is a separate and independent obligation. If the insurance required herein is more or less than allowed by prevailing law, the indemnity obligations in Section 7 below shall be effective only to the maximum extent permitted under applicable law.
8. **Indemnification.** The following indemnifications and releases of liability will apply to any goods or Services provided under this contract. **COMPANY AND CUSTOMER EXPRESSLY AGREE THAT, TO THE EXTENT REQUIRED BY APPLICABLE LAW TO BE EFFECTIVE, THE INDEMNITIES AND DISCLAIMERS OF WARRANTIES CONTAINED HEREIN ARE "CONSPICUOUS."**
- A. **Customer Indemnity Obligations.** Customer hereby releases Company from any liability for, and shall protect, defend, indemnify, and hold harmless Company, its parents, affiliates, subsidiaries, partners, joint owners, joint venturers, and its contractors and subcontractors of any tier, and the officers, directors, agents, representatives, employees, insurers, and consultants (specifically excluding any member of Customer Group) of all of the foregoing, and its and their respective successors, heirs and assigns ("Company Group") from and against all costs (including the payment of reasonable attorneys' fees), losses, liabilities, demands, causes of action, damages, or claims of every type and character ("Claims"), arising out of or resulting from or related, directly or indirectly, to (i) injury to, illness or death of Customer its parents, affiliates, subsidiaries, partners, joint owners, joint venturers, and its contractors and subcontractors of any tier, and the officers, directors, agents, representatives, employees, customers, insurers, invitees and consultants of all of the foregoing, and its and their respective successors, heirs and assigns ("Customer Group"), or (ii) loss of or damage to any property of any member of Customer Group, REGARDLESS OF THE CAUSE OF SUCH CLAIMS, INCLUDING THE NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE, ORDINARY OR GROSS) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF COMPANY GROUP.
- B. **Company Indemnity Obligations.** Company hereby releases Customer from any liability for, and shall protect, defend, indemnify, and hold harmless Customer from and against all Claims arising out of or resulting from or related, directly or indirectly, to (i) injury to, illness or death of any member of Company Group, or (ii) loss of or damage to any property of any member of Company Group, REGARDLESS OF THE CAUSE OF SUCH CLAIMS, INCLUDING THE NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE, ORDINARY OR GROSS) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF CUSTOMER GROUP.
- C. **Third Party Claims.** Notwithstanding the foregoing, to the extent of its negligence, Company and Customer shall each indemnify, defend and hold harmless Claims, of every type and character, which are asserted by third parties for bodily injury, death or loss or destruction of property or interests in property in any manner caused by, directly or indirectly resulting from, incident to, connected with or arising out of the work to be performed, Services to be rendered or materials to be furnished by Customer. When personal injury, death or loss of or damage to property is the result of joint or concurrent negligence of Customer or Company, the indemnitor's duty of indemnification shall be in proportion to its allocable share of such negligence.
- D. **Pollution.** Company agrees that it shall be totally responsible for, and shall protect, defend and indemnify, Customer for all losses, damages, claims, demands, costs, charges, and other expenses, including attorneys' fees, for any and all waste and/or hazardous substances which are in Company Group's exclusive possession and control and directly associated with Company Group's equipment and facilities, **EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF CUSTOMER GROUP.** Customer shall assume all responsibility for, including control and removal of, and shall protect, defend and indemnify Company Group from and against all Claims arising directly or indirectly from all other pollution or contamination which may occur during the conduct of operations hereunder, including, but not limited to, that which may result from fire, blowout, cratering, seepage or any other uncontrolled flow of oil, gas, water or other substance, **EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF COMPANY GROUP.**
- E. **Wild Well.** Customer shall release Company Group of any liability for, and shall protect, defend and indemnify Company Group for any damages, expenses, losses, fines, penalties, costs, expert fees and attorneys' fees arising out of a fire, blow out, cratering, seepage or wild well, including regaining control thereof, debris removal and property restoration and remediation. **THIS INDEMNITY APPLIES EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE, ORDINARY OR GROSS) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF COMPANY GROUP.**
- F. **Underground Damage.** Customer shall release Company Group of any liability for, and shall protect, defend and indemnify Company Group from and against any and all claims, liability and expenses resulting from operations related to the work under this agreement on account of injury to, destruction of, or loss or impairment of any property right in or to oil, gas or other mineral substance or water, if at the time of the act or omission causing such injury, destruction, loss or impairment said substance and not been reduced to physical possession above the surface of the earth, and for any loss or damage to any formation, strata, or reservoir beneath the surface of the earth. **THIS INDEMNITY APPLIES EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE, ORDINARY OR GROSS) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF COMPANY GROUP.**
- G. **Compliance With Laws, Rules And Regulations.** Customer expressly agrees to comply with and abide by all of the laws of the united states and of the state in which goods are delivered or services are performed, including, but not limited to, OSHA, EPA and all rules and regulations now existing or that may be hereafter promulgated under and in accordance with any such law or laws, and Customer hereby agrees to indemnify and hold Company Group harmless from any and all claims, demands, or damages incurred by Company Group arising from Customer Group's failure to comply with all laws and governmental regulations.
- H. The foregoing indemnities set forth in these Terms and Conditions are intended to be enforceable against the parties hereto in accordance with the express terms and scope hereof notwithstanding Texas' Express Negligence Rule or any similar directive that would prohibit or otherwise limit indemnities because of the negligence (whether sole, concurrent, active or passive, ordinary or gross) or other fault or strict liability of Company or Customer.
- I. If a claim is asserted against one of the parties to this agreement which may give rise to a claim for indemnity against the other party hereto, the party against whom the claim is first asserted must notify the potential indemnitor in writing and give the potential indemnitor the right to defend or assist in the defense of the claim.
7. **Risk Of Loss.** a. Title and risk of loss shall pass to Customer upon delivery as specified in Article 9. Customer's receipt of any material delivered hereunder shall be an unqualified acceptance of, and a waiver by Customer of any and all claims with respect to, such material unless Customer gives Company written notice of claim within thirty (30) days after such receipt. Notwithstanding the foregoing, installation or use of materials or equipment shall unequivocally constitute irrevocable acceptance of said materials. Customer assumes all risk and liability for the results obtained by the use of any material or products delivered



Quotation

Quote Number : ODE0001804

ODESSA WAREHOUSE
8001 GROENING STREET
ODESSA TX 79765
Phone: 432-653-0306

Date: 10/19/2018

Valid For 30 Days

Page 8 of 8

hereunder in work performed by on behalf of Customer or in combination with other substances or products. No claim of any kind, whether as to material delivered or for non-delivery of material, and whether or not based on negligence, shall be greater in amount than the purchase price of the material in respect of which such claim is made. **In no event shall Company be liable for special, indirect or consequential damages, whether or not caused by or resulting from the negligence of Company.** b. For services, Company shall not be liable for loss or deterioration of any equipment and material of Customer under Company's control or stored on Company's premises after Company has completed its work if such loss or deterioration results from atmospheric condition, Act of God or other occurrence not within the reasonable control of Company.

8. **Termination.** Company reserves the right to terminate the order at issue, or any part hereof, solely for its convenience at any time without cause with notice to Customer. Company shall have the right to cancel any unfilled order without notice to Customer in the event that Customer becomes insolvent, adjudicated bankrupt, petitions for or consents to any relief under any bankruptcy reorganization statute, violates a term of these Terms and Conditions, or is unable to meet its financial obligations in the normal course of business. In the event of such termination, Company shall immediately stop all work hereunder. Prior to delivery, Customer may terminate this order without cause upon thirty (30) day notice in writing to Company. In the event of such termination, Company at its sole option shall cease work up to thirty (30) days after such notice. Upon the cessation of work, Customer agrees to pay Company a reasonable termination charge consisting of a percentage of the Invoice price, such percentage to reflect the value of the goods, services or work in progress completed upon the cessation of work. Customer shall also pay promptly to Company any costs incurred due to paying and settling claims of Company's vendors or subcontractors arising out of the termination of the order by Customer.

9. **Delivery.** Unless different terms are provided on the face of this order, all items are sold FOB Company's manufacturing facility in Bossier City, LA., and Customer shall bear the cost of transportation to any other named destination. Upon notification of Company of delivery, Customer shall become liable and shall bear all risk of loss associated with the goods at issues regardless of whether the goods are at a location controlled by Company and whether or not caused by the negligence of Company. In the case of Customer pick-up, the truck furnished by Customer is the destination and Company's obligations regarding shipments are fulfilled when the goods are loaded on the truck. Items to be shipped to any other destination outside of the United States are sold FOB port of shipment (Customer will deliver and bear the cost of transportation to the named port and will bear the cost of transportation thereafter to the final destination). The means of shipment and carrier to the point at which Company's liability for transportation costs ceases shall be chosen by Company. Excess packing, marking, shipping, and transportation charges resulting from compliance with Customer's request shall be for Customer's account. Unless otherwise agreed in writing, delivery time is not of the essence.

10. **Returns/Refund.** Within ninety (90) days of delivery, Customer has the option to return any non-defective goods (any goods found to be defective will be subject to the warranty and remedies expressed in paragraphs three (3) and four (4) above). Customer shall bear all costs of shipment and/or transportation for such return and risk of loss for the returned goods shall remain with Customer until re-delivered to Company's Yard. Customer shall receive a full refund for any returns, less a twenty percent (20%) restocking fee. Company at all times reserves the right to designate certain goods as non-refundable in Company's Sales Quote or Sales Order. In addition, any made-to-order, special order, and/or product manufactured to Customer specifications goods are NOT returnable.

11. **Delays.** If a specific shipping date is either not given or is estimated only, and is not promised on the face of this order or in a separate writing signed by Company, Company will not be responsible for delays in filling this order nor liable for any loss or damages resulting from such delays. If a specific shipping date is promised, Company will not be liable for delays resulting from causes beyond Company's control, including without limitation accidents to machinery, fire, flood, act of God or other casualty, vendor delays, labor disputes, labor shortages, lack of transportation facilities, priorities required by, requested by, or granted for the benefit of any governmental agency, or restrictions imposed by law or governmental regulation.

12. **Limitation Of Damages.** Notwithstanding any other provision contained herein, Company shall not be liable to Customer Group of any third party for consequential (whether direct or indirect damages), indirect, incidental, special or punitive damages, howsoever arising, including, but not limited to loss of profits (whether direct or indirect damages), revenues, production or business opportunities, WHETHER OR NOT SUCH LOSSES ARE THE RESULT IN WHOLE OR IN PART FROM THE NEGLIGENCE (WHETHER SOLE, JOINT, CONCURRENT OR COMPARATIVE, ACTIVE OR PASSIVE, ORDINARY OR GROSS) OF COMPANY GROUP, OR ANY DEFECT IN THE PREMISES, PRE-EXISTING CONDITIONS, PATENT OR LATENT, BREACH OF STATUTORY DUTY, STRICT LIABILITY OR ANY OTHER THEORY OF LEGAL LIABILITY OF COMPANY GROUP (EXCLUDING ONLY LOSSES CAUSED BY THE WILLFUL MISCONDUCT OF COMPANY GROUP).

13. **Security Interest.** Customer grants Company, and Company reserves, a security interest, covering all Customer's obligations under these terms (including any liability for breach of Customer's obligations), and applying to all of Customer's right, title, and interest in the Leased Equipment, together with all accessions thereto and any proceeds that may arise in connection with the sale or disposition thereof. Customer shall cooperate with Company in the filing of Financing Statements to perfect such security interest. Furthermore, Customer authorizes Company to execute and file Financing Statements without Customer's signature in any jurisdiction in which such procedure is authorized. Customer warrants, covenants and agrees that it will not, without prior written consent of Company, sell, contract to sell, lease, encumber, or dispose of the Leased Equipment or any interest in it until all obligations secured by this security interest have been fully satisfied.

14. **Patent And Intellectual Property.** Company Retains its Intellectual Property: The sale of any products hereunder does not convey any license by implication, estoppel or otherwise covering combinations of the products with other equipment data or programs. Company retains the copyright in all documents, catalogs and plans supplied to Customer pursuant to or ancillary to the contract. Unless otherwise agreed in writing, Customer shall obtain no interest in any tooling used in the production of any Company product.

15. **Taxes.** Unless otherwise specifically provided for herein, Customer shall be liable for all federal, state, or local taxes or import duties assessed by any governmental entity of any jurisdiction in connection with the goods or services furnished hereunder.

16. **Deceptive Trade Practices.** Customer acknowledges the application of Section 17.45(4) of the Texas Deceptive Trade Practices Act (Texas Business Commission Code §17.41 et. seq.) (the "Act") to any transaction contemplated hereby and represents that it is not a "consumer" for the purposes of the Act.

17. **No Waiver.** Failure to enforce any or all of the provisions in these Terms and Conditions in any particular instance shall not constitute or be deemed to constitute a waiver of or preclude subsequent enforcement of the same provision or any other provision of these Terms and Conditions. Should any provision of these Terms and Conditions be declared invalid or unenforceable all other provisions of these Terms and Conditions shall remain in full force and effect.

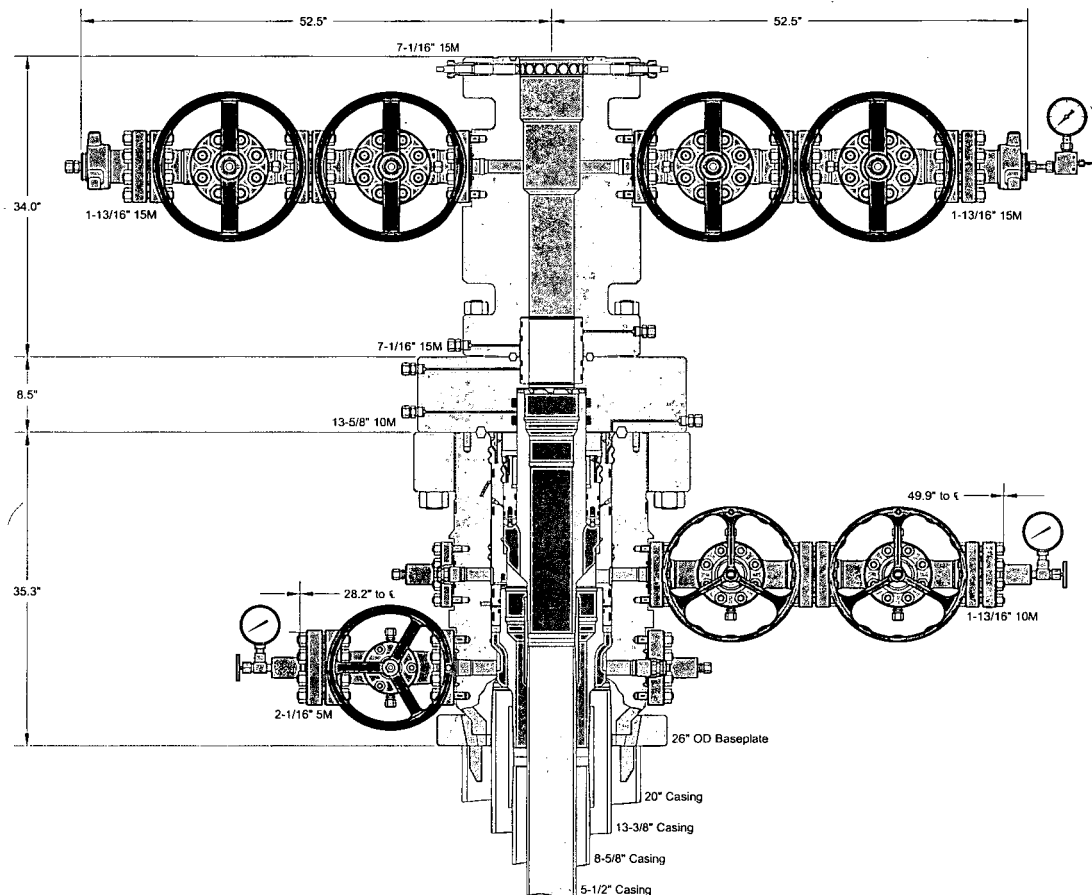
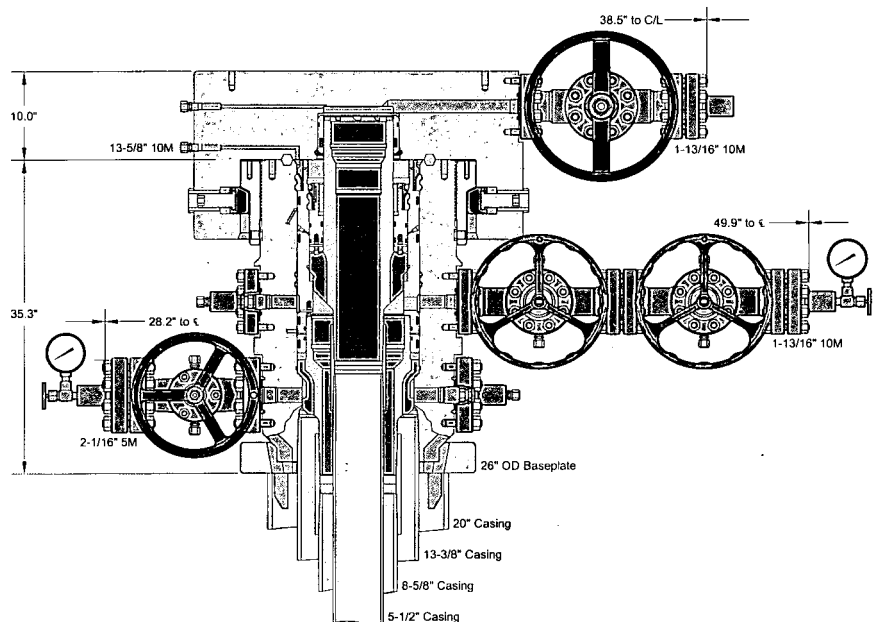
18. **Choice Of Law.** THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND SHALL BE PERFORMABLE IN HARRIS COUNTY, TEXAS WITHOUT REGARD TO CONFLICTS OF LAW PRINCIPALS AND WAIVER OF SAME, EACH PARTY HERETO SUBMITS TO THE JURISDICTION OF THE COURTS OF THE STATE OF TEXAS IN HARRIS COUNTY, TEXAS AND THE FEDERAL COURTS IN AND FOR THE SOUTHERN DISTRICT OF TEXAS SITTING IN HOUSTON, TEXAS IN CONNECTION WITH ANY DISPUTE ARISING UNDER THIS AGREEMENT OR ANY DOCUMENT OR INSTRUMENT ENTERED INTO IN CONNECTION HERewith.

19. **Authority.** Customer warrants and represents that the individual receiving this order at issue on behalf of Customer has the authority to enter into these Terms and Conditions on behalf of Customer, and that upon receipt these Terms and Conditions shall be binding upon Customer.

20. **Force Majeure.** If Company is unable to carry out its obligations hereunder by reason of force majeure, then upon Company's giving of notice and reasonably full particulars of such force majeure in writing to Customer, Company's obligations that are affected by force majeure shall be suspended during the continuance of the force majeure and Company shall not be liable to Customer for any damages incurred by the Customer as a result thereof.

21. **Confidentiality.** Customer acknowledges the highly secret and valuable nature of all proprietary inventions, methods, processes, designs, know-how, and trade secrets embodied in the Company's equipment, products and services and its components (hereinafter referred to as "Confidential Data"). Accordingly, Customer agrees not to disclose or use any Confidential Data. Customer further agrees to take any and all necessary precautions to prevent disclosure of the Confidential Data associated with the Company's equipment, products and services and components thereof to persons other than those employees of Customer for whom such disclosure is necessary for performance of the work hereunder.

22. **Compliance.** Customer expressly agrees to comply with and abide by, all of the laws of the United States and of the State of Texas, including, but not limited to, OSHA, EPA and all rules and regulations now existing or that may be hereafter promulgated under and in accordance with any such law or laws, and hereby agrees to indemnify and hold Company harmless from any and all claims, demands, or damages incurred by Company arising from Customer's failure to comply with all laws and governmental regulations. The indemnities in this paragraph shall be in addition to any other indemnity obligations between Customer and Company, including any other indemnity obligations contained herein.



INFORMATION CONTAINED HEREIN IS THE PROPERTY OF CACTUS WELLHEAD, LLC. REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PERMISSIBLE ONLY AS PROVIDED BY CONTRACT OR AS EXPRESSLY AUTHORIZED BY CACTUS WELLHEAD, LLC.

ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

13-3/8" x 8-5/8" x 5-1/2" 10M MBU-3T Wellhead System
With 8-5/8" And 5-1/2" Mandrel Casing Hangers
And 7-1/16" 15M x 7-1/16" 15M CTH-EN Tubing Head

DEVON ENERGY CORPORATION
DELAWARE BASIN

DRAWN

DLE

01NOV18

APPRV

DRAWING NO.

HBE0000013



Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly. It is good practice to use lifting & safety equipment but not mandatory.

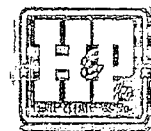
Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
11535 Brittmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com



RIG 212



QUALITY DOCUMENT

PHOENIX RUBBER

INDUSTRIAL LTD.

6728 Szeged, Budapesti út 10, Hungary • H-6701 Szeged, P. O. Box 152
 Phone: (3662) 556-737 • Fax: (3662) 556-738

SALES & MARKETING: H-1092 Budapest, Ráday u. 42-44, Hungary • H-1440 Budapest, P. O. Box 26
 Phone: (361) 456-4200 • Fax: (361) 217-2972, 456-4273 • www.tatruemerge.hu

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 552	
PURCHASER: Phoenix Beattie Co.				P.O. N°: 1519FA-871	
PHOENIX RUBBER order N°: 170466		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 34128		NOMINAL / ACTUAL LENGTH: 11,43 m			
W.P. 68,96 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature <p style="text-align: center;">See attachment. (1 page)</p>					
↑ 10 mm = 10 Min. → 10 mm = 25 MPa					
COUPLINGS					
Type	Serial N°		Quality	Heat N°	
3" coupling with 4 1/16" Flange end	720 719		AISI 4130	C7626	
			AISI 4130	47357	
API Spec 16 C Temperature rate: "B"					
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
Date:	Inspector		Quality Control		
29. April. 2002.			PHOENIX RUBBER Industrial Ltd. Hose Inspection and VERIFIED TRUE COPY PHOENIX RUBBER Q.C.		

40920-0-00015

8	GN1	+0.000	PC	14:00
	RD1	+0.000	PC	14:00
	BL	+0.041	PC	14:00
7	GN1	+0.000	PC	13:40
	RD1	+0.000	PC	13:40
	BL	+0.017	PC	13:40
6	GN1	+0.000	PC	13:20
	RD1	+0.000	PC	13:20
	BL	+0.000	PC	13:20
5	GN1	+0.000	PC	13:00
	RD1	+0.000	PC	13:00
	BL	+0.000	PC	13:00
4				
3				
2				

GENTEX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE CO.
PHOENIX RUBBER CO.



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

SUPO Data Report

05/30/2019

APD ID: 10400037318

Submission Date: 12/14/2018

Highlighted data
reflects the most
recent changes

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

TOMB_RAIDER_12_1_FED_701H_EX_RD_20181214094405.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

TOMB_RAIDER_12_1_FED_701H_ACCESS_RD_20181214094423.pdf

New road type: COLLECTOR, RESOURCE

Length: 4150

Feet

Width (ft.): 30

Max slope (%): 6

Max grade (%): 4

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 20

New road access erosion control: Water Drainage Ditch

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Access surfacing type: GRAVEL

Access topsoil source: ONSITE

Access surfacing type description:

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: See attached Interim reclamation diagram.

Access other construction information:

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: CULVERT,OTHER

Drainage Control comments: na

Road Drainage Control Structures (DCS) description: na

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

TOMB_RAIDER_12_1_FED_701H_OneMileBuffer_WA017301212_20181214094528.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: All flowlines will be buried going to the TOMB RAIDER 12 CTB 2. Please attached CTB.

Section 5 - Location and Types of Water Supply

Water Source Table

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Water source use type: STIMULATION

Water source type: RECYCLED

Describe type:

Source latitude:

Source longitude:

Source datum:

Water source permit type: OTHER

Source land ownership: FEDERAL

Water source transport method: PIPELINE

Source transportation land ownership: FEDERAL

Water source volume (barrels): 500000

Source volume (acre-feet): 64.44655

Source volume (gal): 21000000

Water source and transportation map:

TOMB_RAIDER_12_1_FED_331H_611H_701H_731H_watermap_20181214090123.pdf

Water source comments: The attached Water Transfer Map is a proposal only and the final route and documentation will be provided by a Devon contractor prior to installation. When available Devon will always follow existing disturbance.

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Section 6 - Construction Materials

Construction Materials description: Dirt fill and caliche will be used to construct well pad. Map attached.

Construction Materials source location attachment:

Tomb_Raider_12_Pad_2_Caliche_Map_20181214090214.pdf

Section 7 - Methods for Handling Waste

Waste type: PRODUCED WATER

Waste content description: Average produced BWPD over the first year of production

Amount of waste: 1000 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: OFF-LEASE INJECTION **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: Multiple methods for handling waste will be utilized. Via trucking, Dvn owned disposal system and or third party pipeline take away.

Waste type: COMPLETIONS/STIMULATION

Waste content description: Flow back water during completion operations.

Amount of waste: 3000 barrels

Waste disposal frequency : One Time Only

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Various disposal locations in Lea and Eddy counties.

Waste type: FLOWBACK

Waste content description: Average produced BWPD over the flowback period (first 30 days of production).

Amount of waste: 2000 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: OFF-LEASE INJECTION **Disposal location ownership:** STATE

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Disposal type description:

Disposal location description: Produced water during flowback will be disposed of at various disposals in Lea and Eddy County.

Waste type: DRILLING

Waste content description: Water Based Cuttings

Amount of waste: 1637.3 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: All cuttings will disposed of at R360, Sundance, or equivalent.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

RIGLAYOUT_20181214094659.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: TOMB RAIDER 12 PAD

Multiple Well Pad Number: 2

Recontouring attachment:

TOMB_RAIDER_12_1_FED_701H_RECLAMATION_20181214094714.pdf

Drainage/Erosion control construction: All areas disturbed shall be reclaimed as early and as nearly as practicable to their original condition or their final land use and shall be maintained to control dust and minimize erosion to the extent practicable.

Drainage/Erosion control reclamation: Topsoils and subsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns. The disturbed area then shall be reseeded in the first favorable growing season.

Well pad proposed disturbance (acres): 5.626

Well pad interim reclamation (acres): 2.536

Well pad long term disturbance (acres): 3.09

Road proposed disturbance (acres): 2.86

Road interim reclamation (acres): 0

Road long term disturbance (acres): 2.86

Powerline proposed disturbance (acres): 1.172

Powerline interim reclamation (acres): 0

Powerline long term disturbance (acres): 1.172

Pipeline proposed disturbance (acres): 0.138

Pipeline interim reclamation (acres): 0

Pipeline long term disturbance (acres): 0.138

Other proposed disturbance (acres): 5.74

Other interim reclamation (acres): 0

Other long term disturbance (acres): 5.74

Total proposed disturbance: 15.536

Total interim reclamation: 2.536

Total long term disturbance: 13

Disturbance Comments:

Reconstruction method: Operator will use Best Management Practices "BMP" to mechanically recontour to obtain the desired outcome.

Topsoil redistribution: Topsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.

Soil treatment: Topsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.

Existing Vegetation at the well pad: Shinnery, yucca, grasses and mesquite.

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre
-----------	-------------

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: JACOB

Last Name: OCHOA

Phone: (575)748-9934

Email: JACOB.OCHOA@DVN.COM

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Maintain weeds on an as need basis.

Weed treatment plan attachment:

Monitoring plan description: Monitor as needed.

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Section 12 - Other Information

Right of Way needed? NO

Use APD as ROW?

ROW Type(s):

ROW Applications

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 701H

SUPO Additional Information: ALL FLOWLINES ARE BURIED

Use a previously conducted onsite? YES

Previous Onsite information: 5/4/2017; UBER NORTH, TOMB RAIDER 12 -1 FED 521H

Other SUPO Attachment

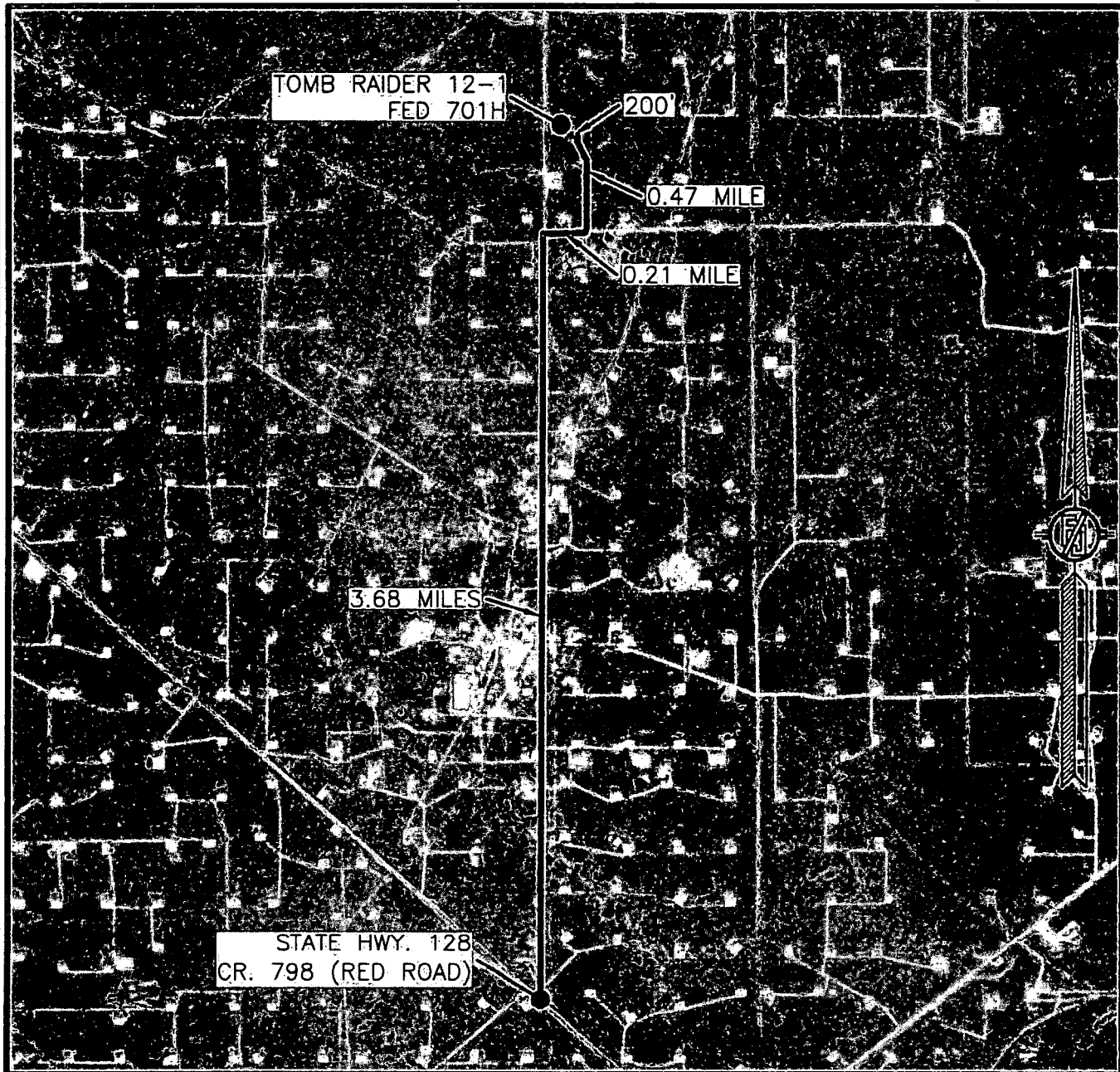
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ELECTRIC___Tomb_Raider_12_Wellpad_2__CTB_2_20181214090846.pdf

Pay.gov___Receipt_331H_701H_731H_611H_20181214123954.pdf

7660154F_5FL_1GL_TR_12_WP_2_TR_12_CTB_2_P_BURIED_20190415094018.pdf

SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 12-1 FED 701H
LOCATED 250 FT. FROM THE SOUTH LINE
AND 230 FT. FROM THE WEST LINE OF
SECTION 12, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

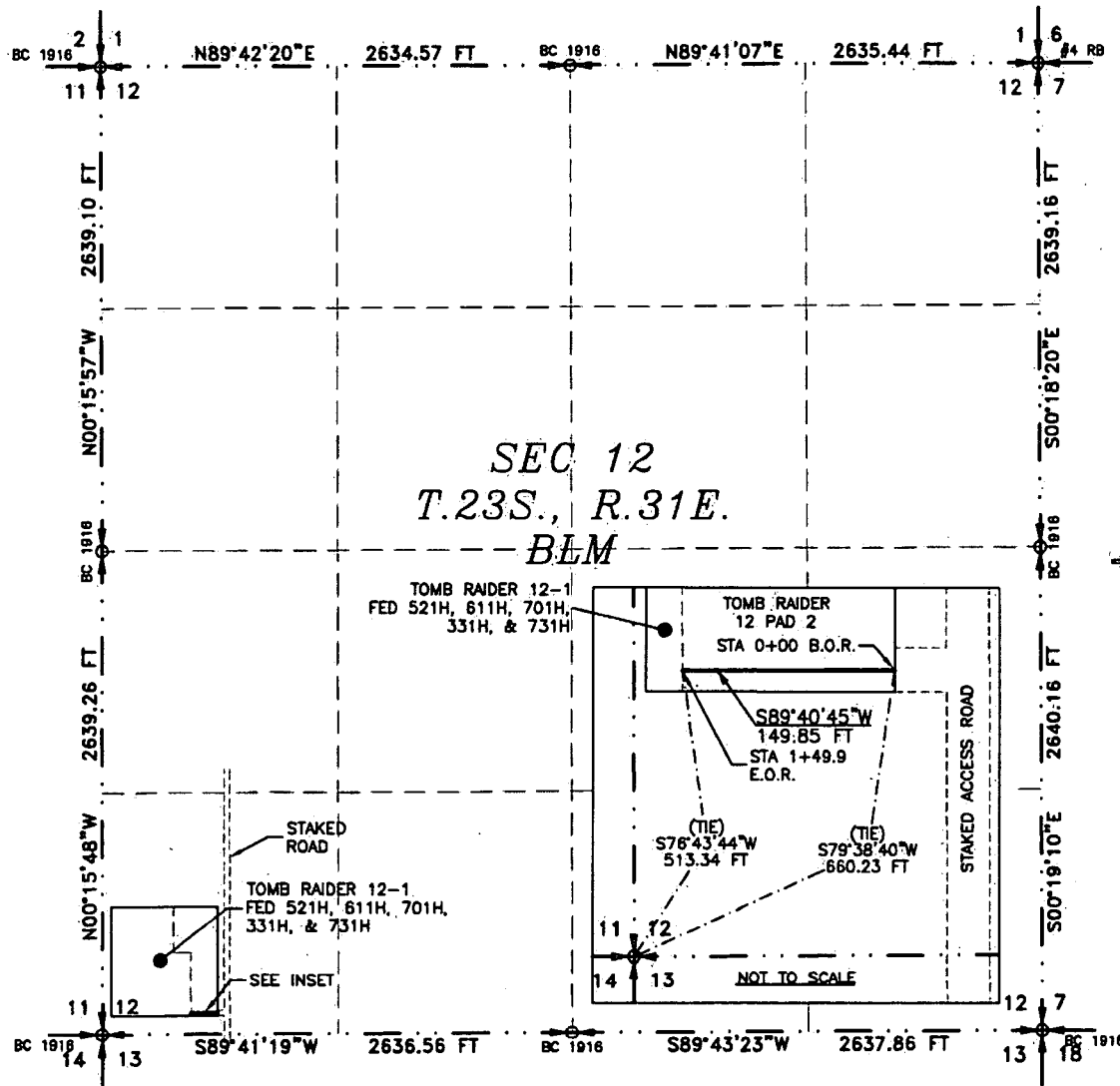
SURVEY NO. 6671

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD FOR TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018



SEE NEXT SHEET (2-2) FOR DESCRIPTION

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 6th DAY OF NOVEMBER, 2018

FILMON F. JARAMILLO, SLS 12797
301 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6671

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-2

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD FOR TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S79°38'40"W, A DISTANCE OF 660.23 FEET;
THENCE S89°40'45"W A DISTANCE OF 149.85 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S76°43'44"W, A DISTANCE OF 513.34 FEET;

SAID STRIP OF LAND BEING 149.85 FEET OR 9.08 RODS IN LENGTH, CONTAINING 0.103 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4 149.85 L.F. 9.08 RODS 0.103 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

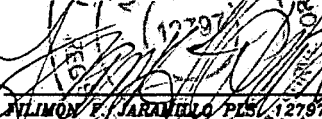
SHEET: 2-2

MADRON SURVEYING, INC.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 12TH DAY OF NOVEMBER 2018


FILIMON F. JARAMILLO, PLS 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6671

CARLSBAD, NEW MEXICO

PLAT
One Mile Radius Map



This map is for illustrative purposes only and is neither a legally recorded map nor a survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.

USA Contiguous Equidistant Conic
Datum: North American 1983
Created by: FME Server
Map is current as of 12/12/2018



0 0.3 Miles
1 inch = 0.44 miles

TOMB RAIDER 12-1 FED 701H
WA017301212

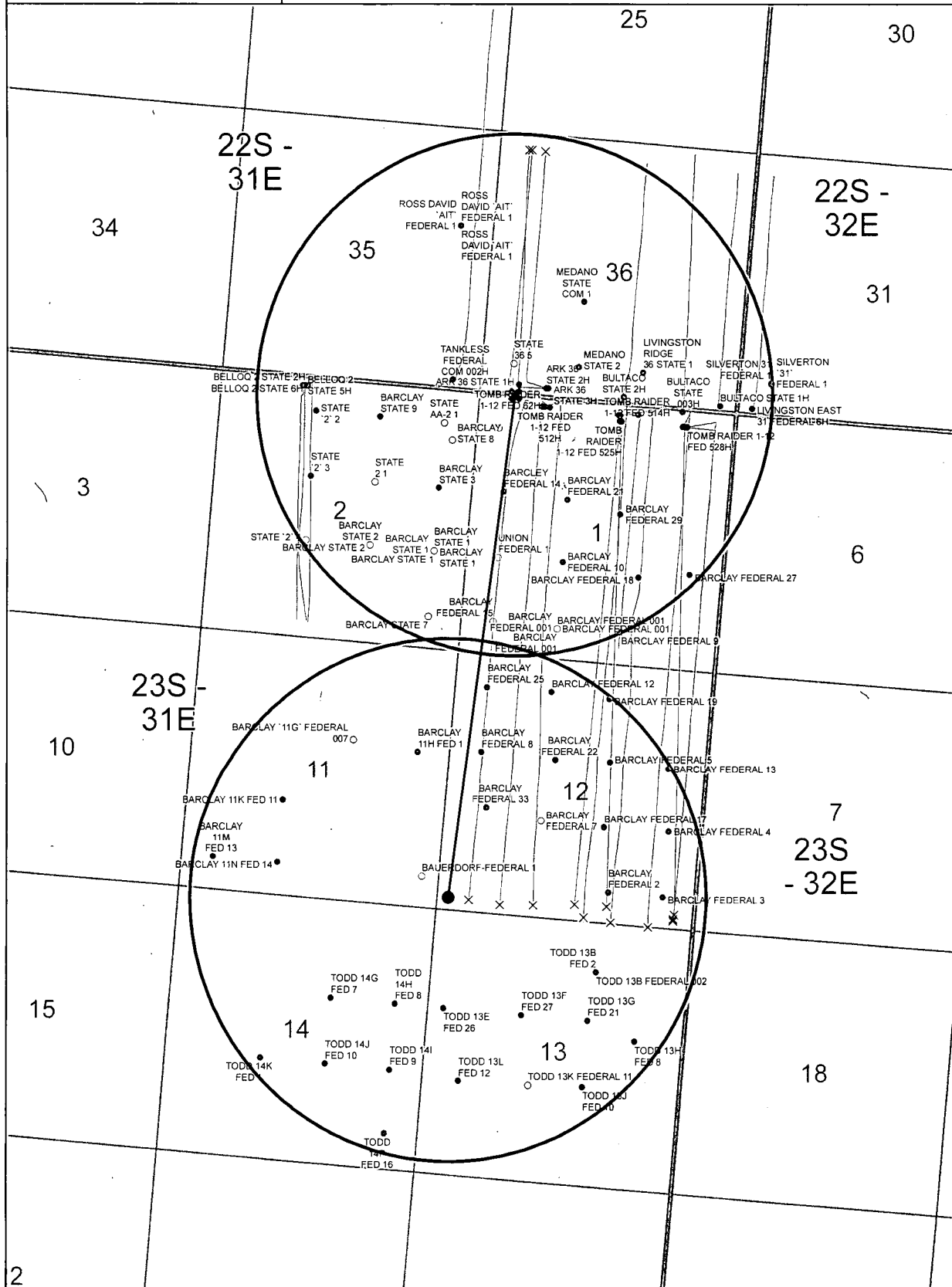
TOMB RAIDER 1-12 FED 61H

Nearest wellbore to SHL: 421 ft.

ARK 36 STATE 1H

Nearest wellbore to BHL: 79 ft.

- Unknown SHL
- Active SHL
- Inactive SHL
- × BHL



TOMB RAIDER 12-1 FED

331H/611H/701H/731H

devon

This map is for illustrative purposes only and is neither a legally recorded map nor survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.

WGS_1984_Web_Mercator_Auxiliary_Sphere

Prepared by: _User

Map is current as of: 07-Dec-2018



Miles

0 0.07 0.14 0.28 1:14,228

TODD 2-TW POND

DURATION: 30 DAY INSTALL PRIOR TO COMPLETION /
DEVON WILL CONTACT BLM IF ADDITIONAL TIME IS NEEDED
DISTURBANCE: EXISTING
CONTENTS: TREATED WATER
TYPE OF PIPE: LAYFLAT
SIZE OF PIPE: 10" OR 12"
LENGTH OF PIPE: 7,210'

TOMB RAIDER 12-1 FED
331H/611H/701H/731H

Tomb Raider 12 Pad 2 Caliche Map

Tomb Raider 12 Pad 2

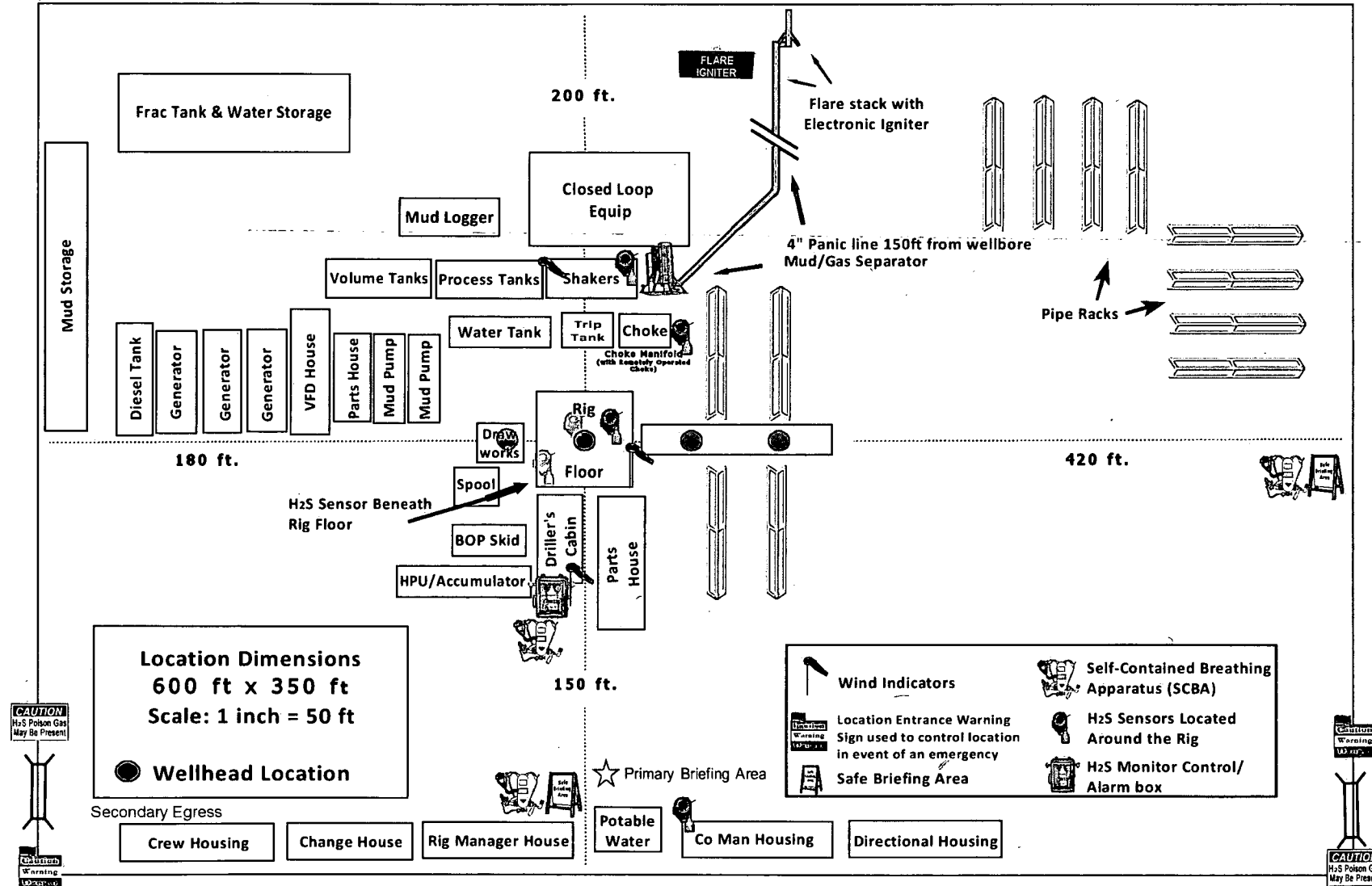
T23S R31E

Distance= 2.62 Miles

© 2018 Google

Caliche Pit

Devon Energy - Well Pad Rig Location Layout Safety Equipment Location

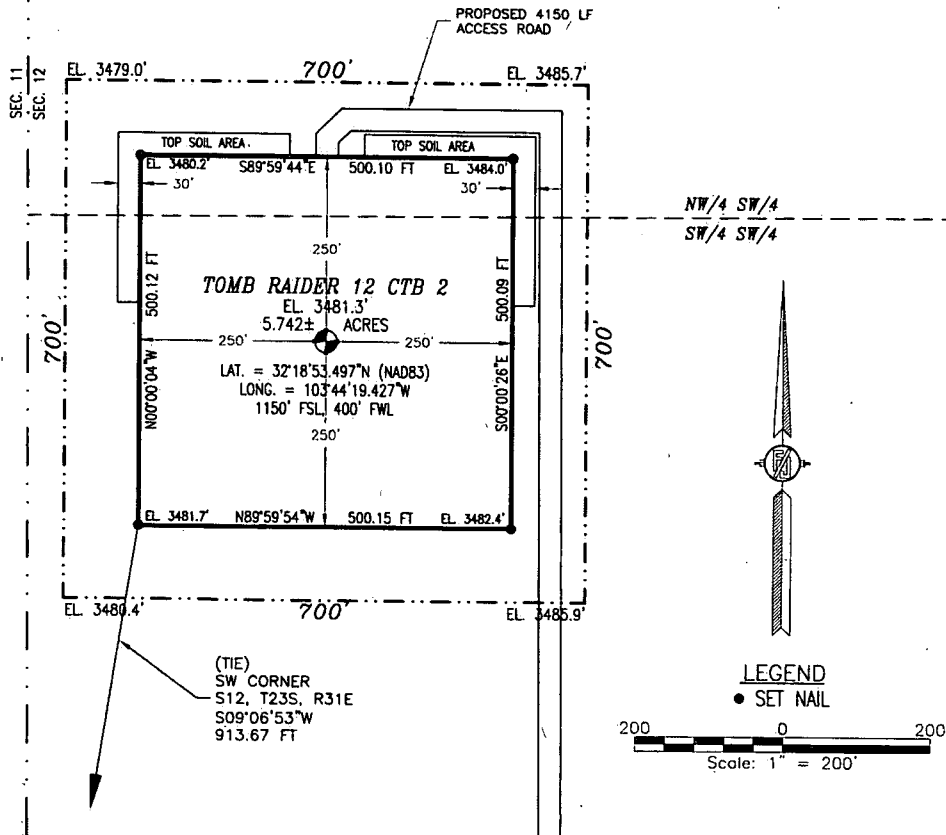


MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN THE SW/4 SW/4 & NW/4 SW/4 OF
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

DECEMBER 13, 2018



DESCRIPTION

A CERTAIN PIECE OR PARCEL OF LAND AND REAL ESTATE LYING IN THE SW/4 SW/4 & NW/4 SW/4 OF SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

BEGINNING AT THE SOUTHWEST CORNER OF THE PARCEL, WHENCE THE SOUTHWEST CORNER OF SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S09°06'53"W, A DISTANCE OF 913.67 FEET;
THENCE N00°00'04"W A DISTANCE OF 500.12 FEET TO THE NORTHWEST CORNER OF THE PARCEL;
THENCE S89°59'44"E A DISTANCE OF 500.10 FEET TO THE NORTHEAST CORNER OF THE PARCEL;
THENCE S00°00'26"E A DISTANCE OF 500.09 FEET TO THE SOUTHEAST CORNER OF THE PARCEL;
THENCE N89°59'54"W A DISTANCE OF 500.15 FEET TO THE SOUTHWEST CORNER OF THE PARCEL, TO THE POINT OF BEGINNING;
CONTAINING 4.818 ACRES IN THE SW/4 SW/4 & 0.924 ACRES IN THE NW/4 SW/4 FOR A TOTAL OF 5.742 ACRES MORE OR LESS.

GENERAL NOTES

- 1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A CENTRAL TANK BATTERY
- 2.) BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST ZONE MODIFIED TO THE SURFACE (NAD83)

DRIVING DIRECTIONS: FROM THE INTERSECTION OF STATE HIGHWAY 128 AND CR 798 (RED ROAD) GO NORTH ON CR 798 FOR APPROX. 3.68 MILES, TURN RIGHT ON CALICHE ROAD AND GO EAST APPROX. 0.21 OF A MILE, TURN LEFT GO NORTH APPROX. 0.72 OF A MILE, TURN LEFT GO WEST-SOUTH 336' (TOTAL 4150') TO THE NORTH EDGE OF PAD FOR THIS LOCATION.

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 13TH DAY OF DECEMBER 2018

FILMON F. JARAMILLO
12797
NEW MEXICO
CARLSBAD, NEW MEXICO

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

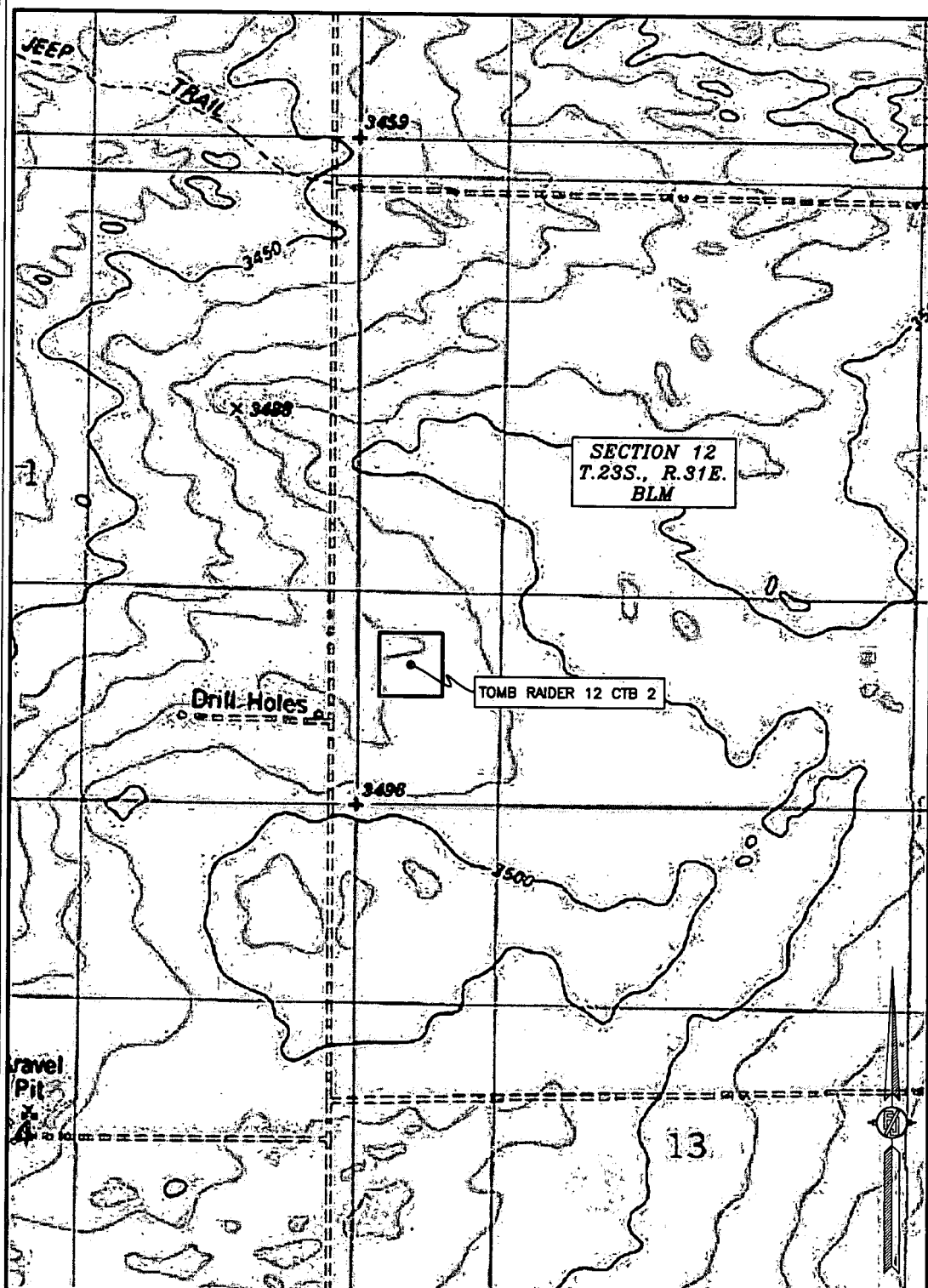
SURVEY NO. 6128A

SHEET: 1-3

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN THE SW/4 SW/4 & NW/4 SW/4 OF
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

QUAD MAP



SURVEY NO. 6128A

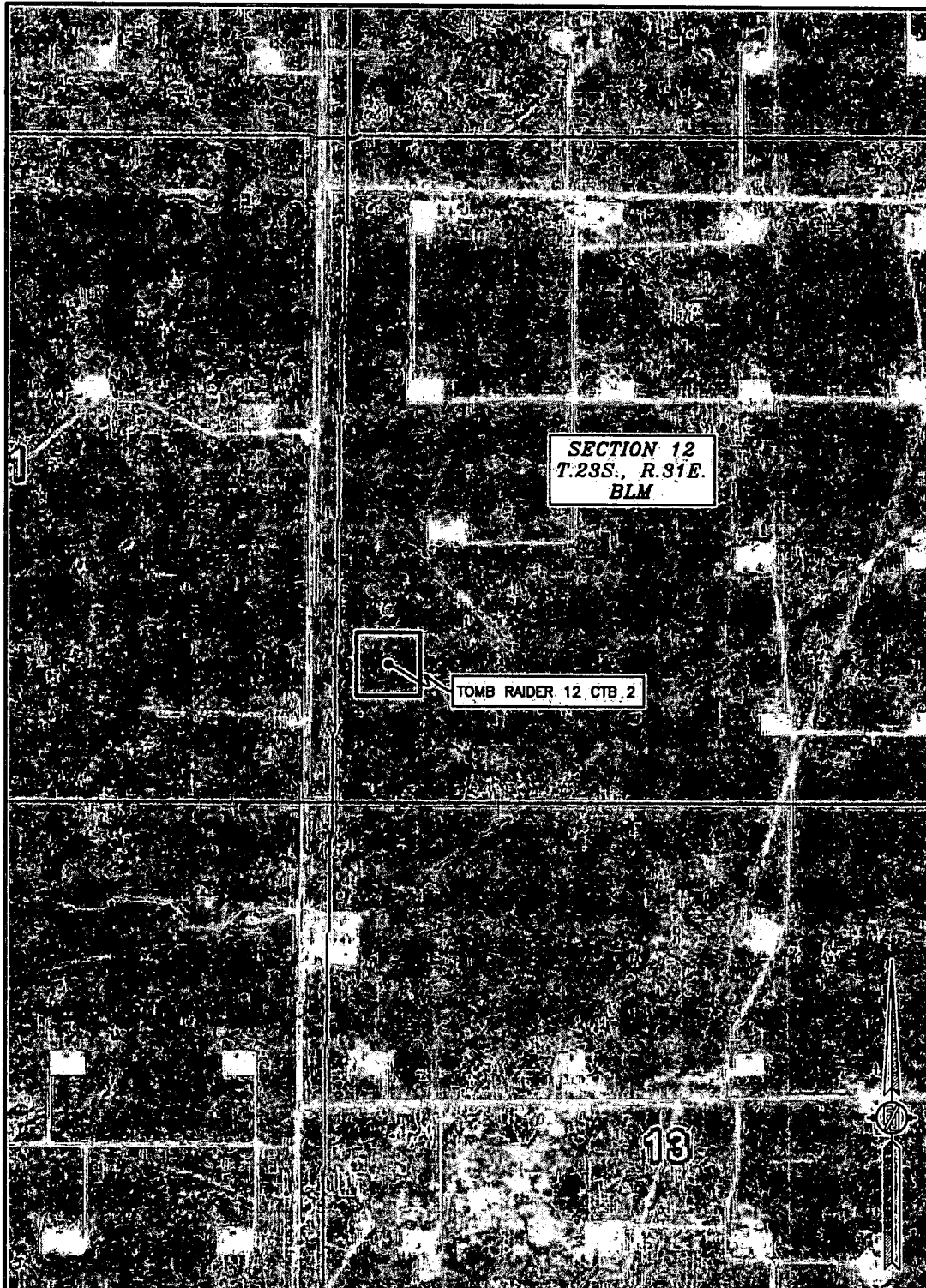
MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN THE SW/4 SW/4 & NW/4 SW/4 OF
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

DECEMBER 13, 2018

AERIAL PHOTO

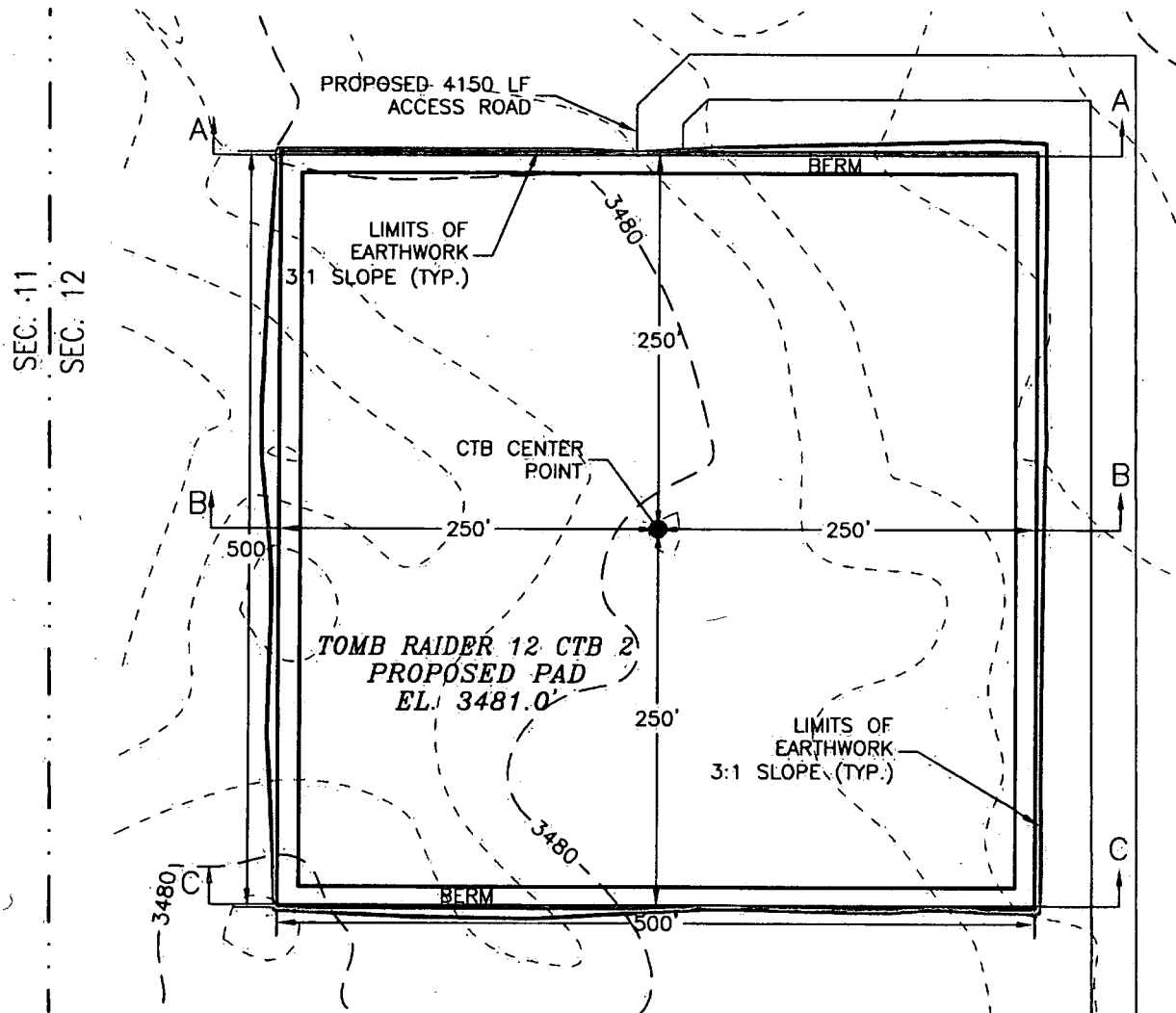


SHEET: 3-3

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SURVEY NO. 6128A

PLAN VIEW



DEVON ENERGY PRODUCTION COMPANY, L.P.
 GRADING PLAN AND CROSS SECTIONS
 FOR TOMB RAIDER 12 CTB 2
 SECTION 12, TOWNSHIP 23 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

012 60 120 240
 SCALE 1" = 120'

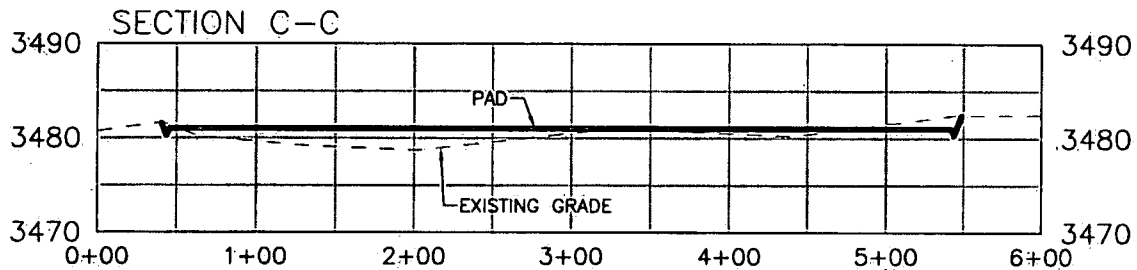
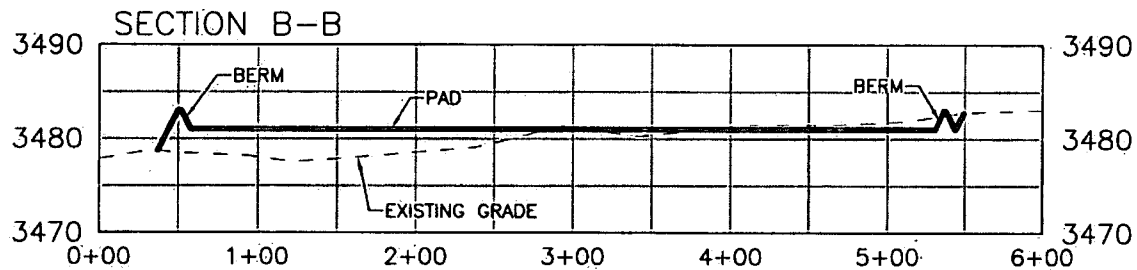
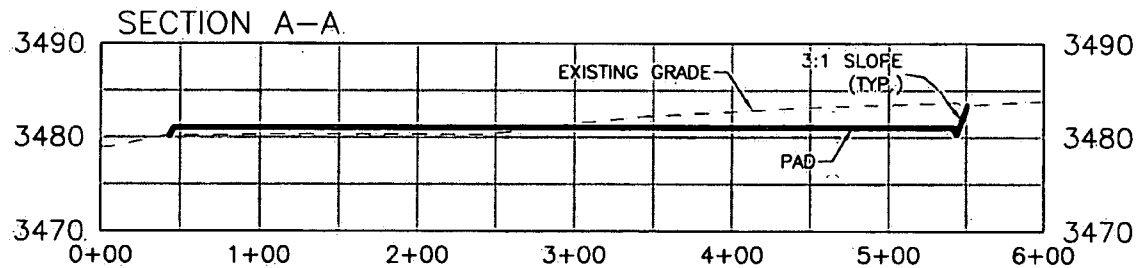
CUT	FILL	NET
2591 CU. YD	9976 CU. YD	7386 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

DECEMBER 13, 2018
 MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SHEET 1-2
 SURVEY NO. 6128A

CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.
 GRADING PLAN AND CROSS SECTIONS
 FOR TOMB RAIDER 12 CTB 2
 SECTION 12, TOWNSHIP 23 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

012 60 120 240
 SCALE 1" = 120' - 1" = 20' VER

CUT	FILL	NET
2591 CU. YD	9976 CU. YD	7386 CU. YD (FILL)

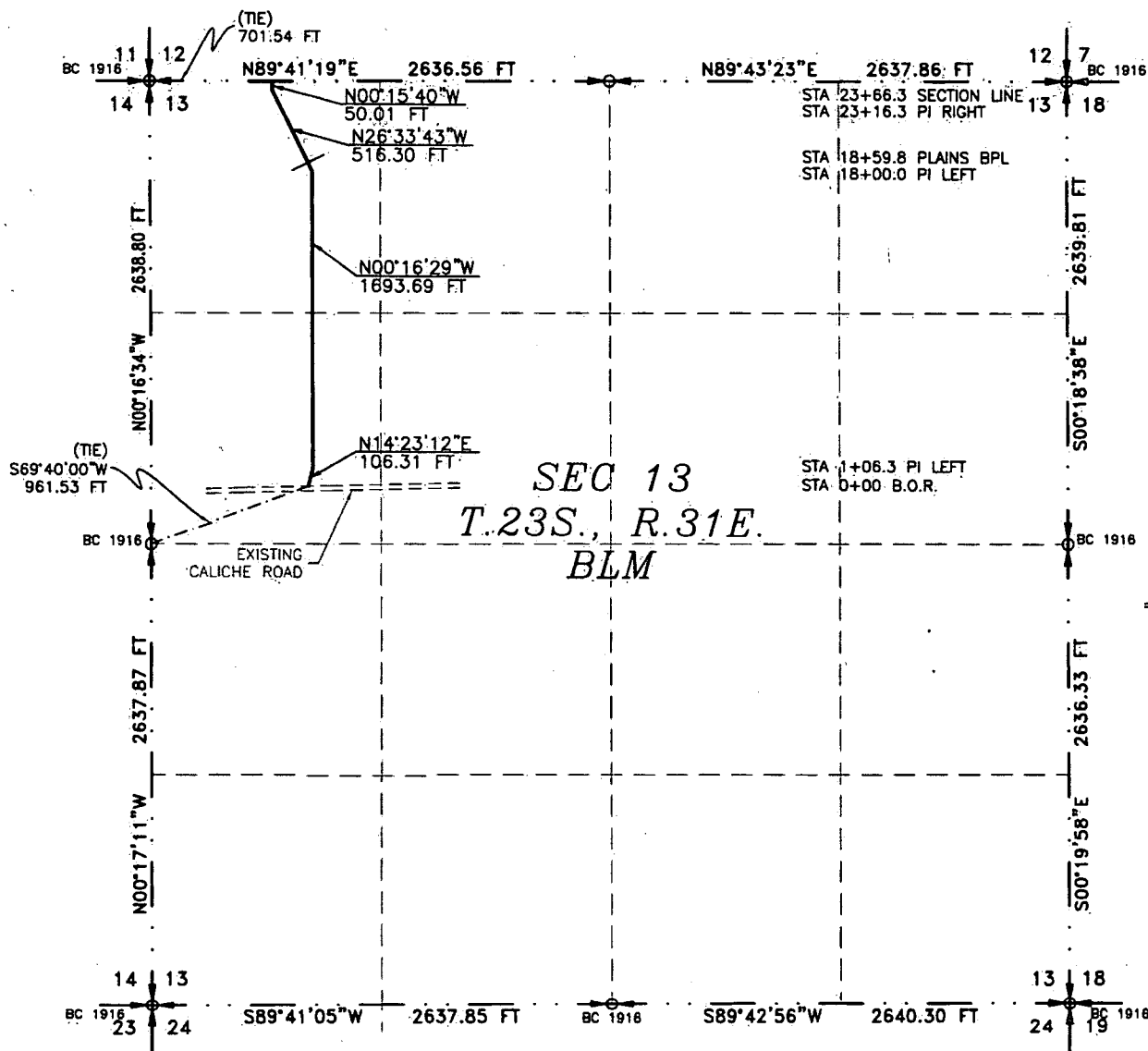
EARTHWORK QUANTITIES ARE ESTIMATED

DECEMBER 13, 2018
 MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
 (575) 234-3341

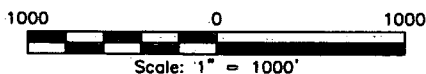
SHEET 2-2
 SURVEY NO. 6128A

ACCESS ROAD PLAT
ACCESS ROAD TO THE TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 13, 2018



SEE NEXT SHEET (2-4) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-4

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 13 DAY OF DECEMBER 2018

(Signature of Filmon F. Jaramillo)
FILMON F. JARAMILLO, PLS 12797
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6128A

ACCESS ROAD PLAT
ACCESS ROAD TO THE TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 13, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 NW/4 OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S69°40'00"W, A DISTANCE OF 961.53 FEET;

THENCE N14°23'12"E A DISTANCE OF 106.31 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N00°16'29"W A DISTANCE OF 1693.69 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N26°33'43"W A DISTANCE OF 516.30 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N00°15'40"W A DISTANCE OF 50.01 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S89°41'19"W, A DISTANCE OF 701.54 FEET;

SAID STRIP OF LAND BEING 2366.31 FEET OR 143.41 RODS IN LENGTH, CONTAINING 1.630 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NW/4	993.30 L.F.	60.20 RODS	0.684 ACRES
NW/4 NW/4	1373.01 L.F.	83.21 RODS	0.946 ACRES

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 13 DAY OF DECEMBER, 2018

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-4

MADRON SURVEYING INC.

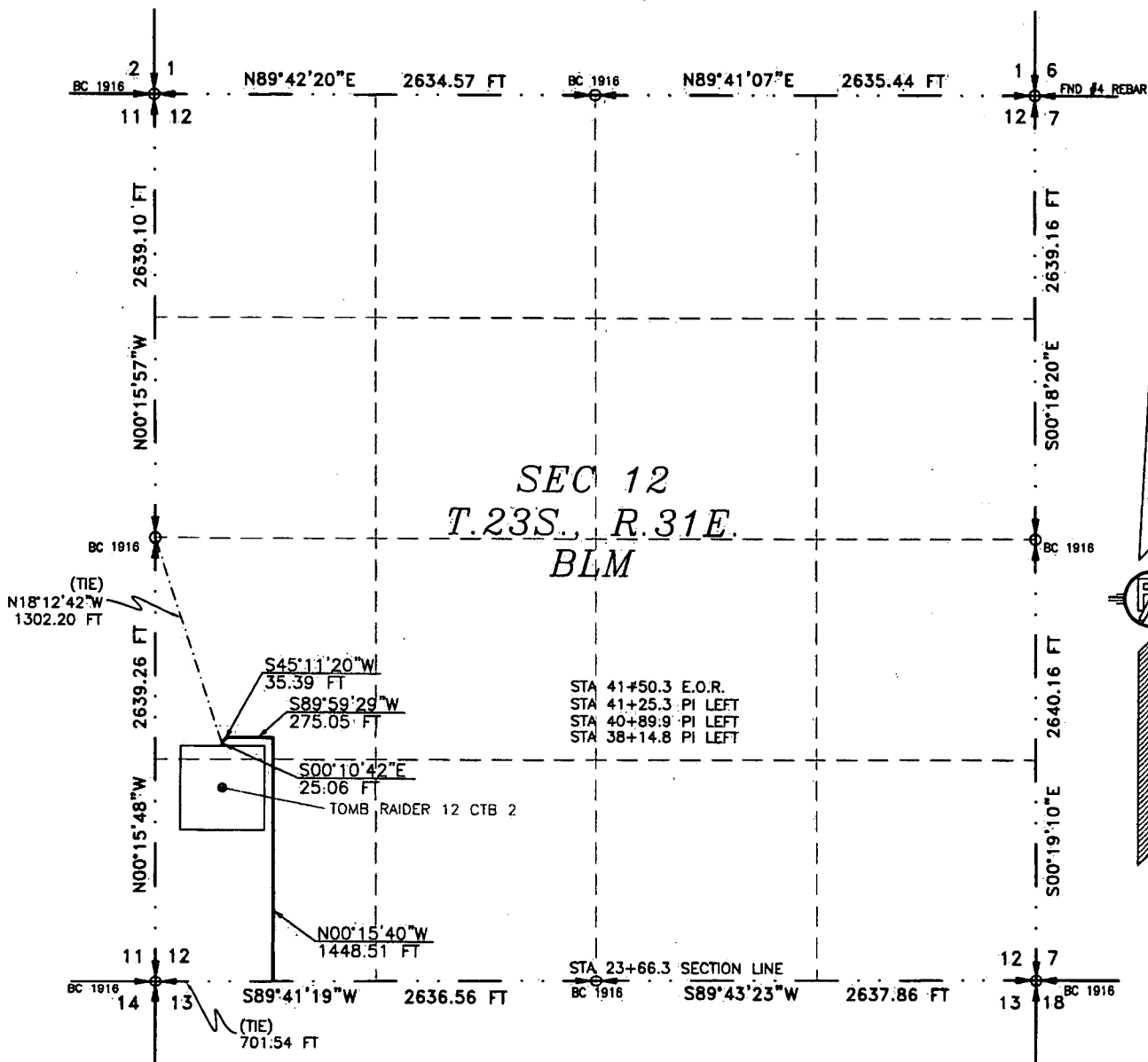
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6128A

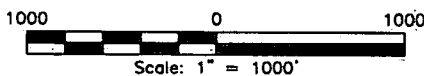
CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT
ACCESS ROAD TO THE TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 13, 2018



SEE NEXT SHEET (4-4) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 13 DAY OF DECEMBER 2018

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6128A

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SHEET: 3-4

ACCESS ROAD PLAT
ACCESS ROAD TO THE TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 13, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S89°41'19"W, A DISTANCE OF 701.54 FEET;

THENCE N00°15'40"W A DISTANCE OF 1448.51 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°59'29"W A DISTANCE OF 275.05 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S45°11'20"W A DISTANCE OF 35.39 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S00°10'42"E A DISTANCE OF 25.06 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N18°12'42"W, A DISTANCE OF 1302.20 FEET;

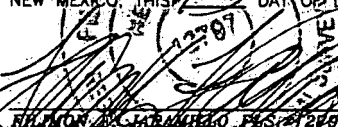
SAID STRIP OF LAND BEING 1784.01 FEET OR 108.12 RODS IN LENGTH, CONTAINING 1.229 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4	1319.48 L.F.	79.97 RODS	0.909 ACRES
NW/4 SW/4	464.53 L.F.	28.15 RODS	0.320 ACRES

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 13 DAY OF DECEMBER 2018.


FILIMON F. JARAMILLO, PLS. #12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT;

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 4-4

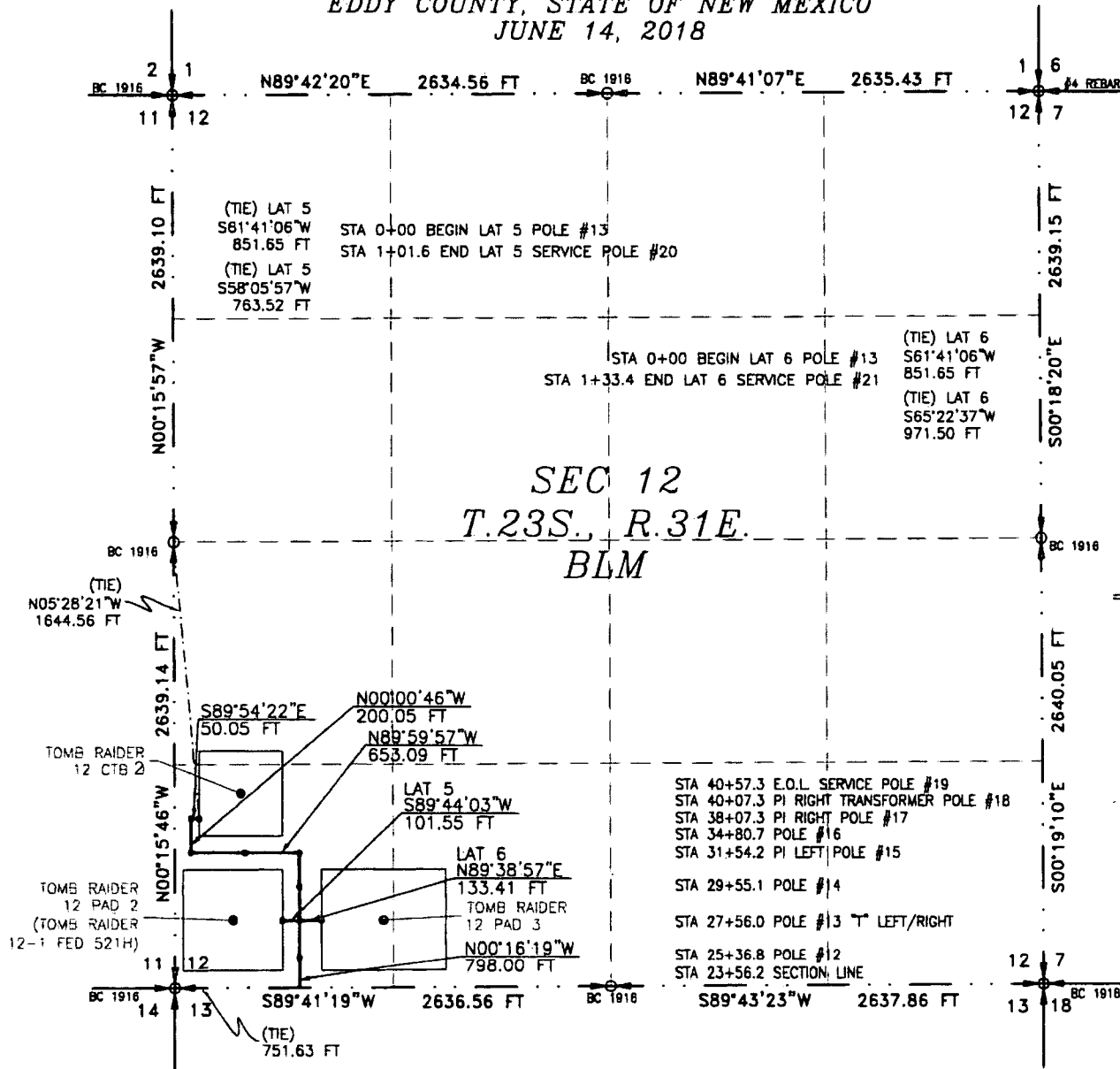
MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 6128A

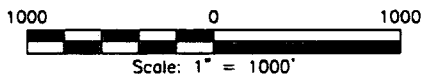
ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 2, TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018



SEE NEXT SHEET (5-7) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 4-7

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 22 DAY OF JUNE 2018

FILMON F. JARAMILLO PLS. 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6298

ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 21, TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

MAIN TO TOMB RAIDER 12 CTB 1

BEGINNING AT A POINT WITHIN THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S89°41'19"W, A DISTANCE OF 751.63 FEET;

THENCE N00°16'19"W A DISTANCE OF 798.00 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N89°59'57"W A DISTANCE OF 653.09 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N00°00'46"W A DISTANCE OF 200.05 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°54'22"E A DISTANCE OF 50.05 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N05°28'21"W, A DISTANCE OF 1644.56 FEET;

SAID STRIP OF LAND BEING 1701.19 FEET OR 103.10 RODS IN LENGTH, CONTAINING 1.172 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4 1701.19 L.F. 103.10 RODS 1.172 ACRES

LATERAL 5 TO TOMB RAIDER 12 PAD 2

BEGINNING AT A POINT WITHIN THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S61°41'06"W, A DISTANCE OF 851.65 FEET;

THENCE S89°44'03"W A DISTANCE OF 101.55 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S58°05'57"W, A DISTANCE OF 763.52 FEET;

SAID STRIP OF LAND BEING 101.55 FEET OR 6.15 RODS IN LENGTH, CONTAINING 0.070 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4 101.55 L.F. 6.15 RODS 0.070 ACRES

LATERAL 6 TO TOMB RAIDER 12 PAD 3

BEGINNING AT A POINT WITHIN THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S61°41'06"W, A DISTANCE OF 851.65 FEET;

THENCE N89°38'57"E A DISTANCE OF 133.41 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S65°22'37"W, A DISTANCE OF 971.50 FEET;

SAID STRIP OF LAND BEING 133.41 FEET OR 8.09 RODS IN LENGTH, CONTAINING 0.092 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4 133.41 L.F. 8.09 RODS 0.092 ACRES

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS DAY OF JUNE 2018

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

FILMON F. JARAMILLO, PLS. 12797

SURVEY NO. 6298

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

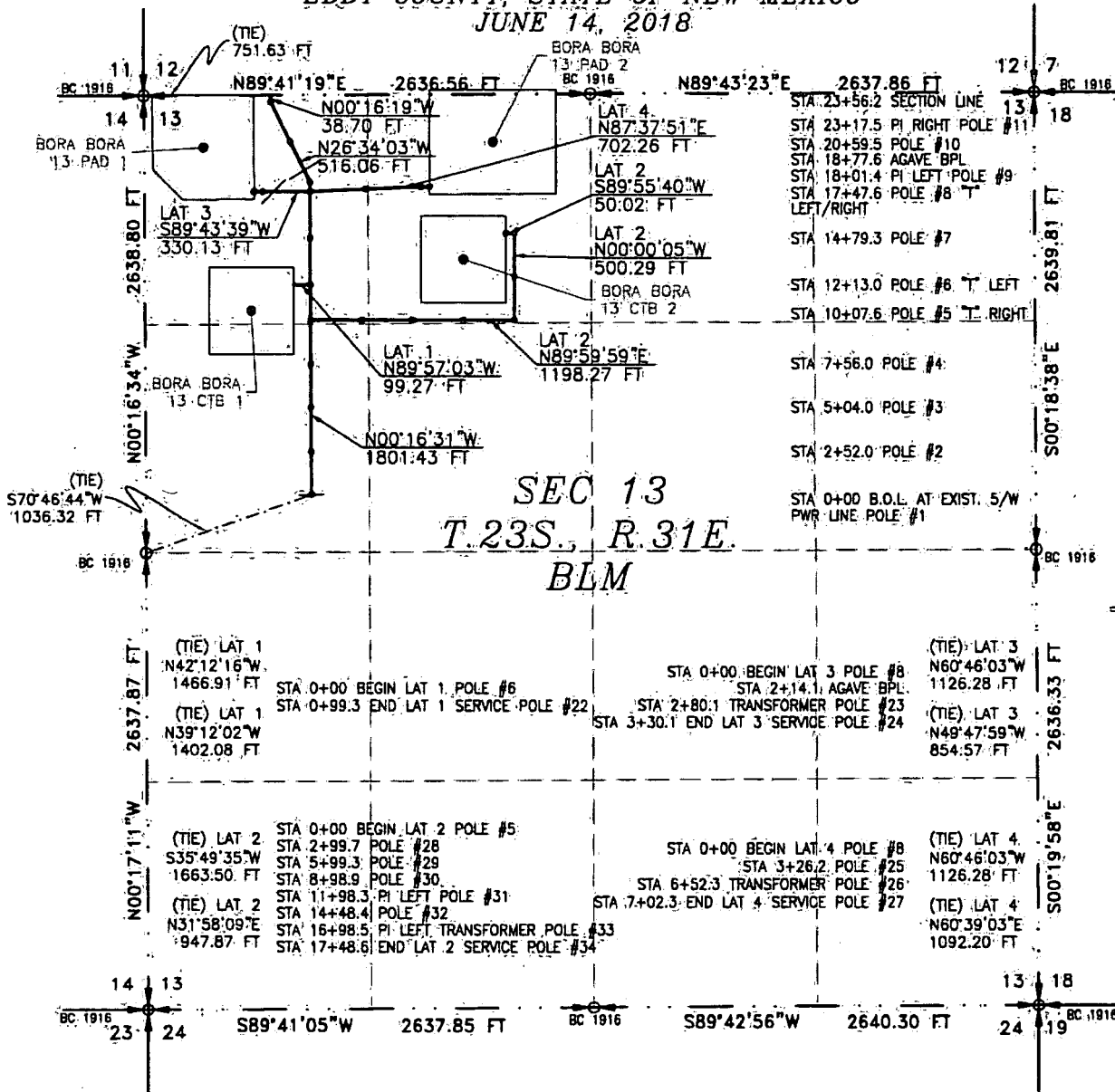
SHEET: 5-7

ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 2 TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JUNE 14, 2018



SEE NEXT SHEETS (2-7 & 3-7) FOR DESCRIPTION

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 21 DAY OF JUNE 2018

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 98220
Phone (575) 234-3341

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-7

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SURVEY NO. 6298

ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 2, TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12, PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

MAIN TO TOMB RAIDER 12 CTB 1

BEGINNING AT A POINT WITHIN THE SW/4 NW/4 OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S70°46'44"W, A DISTANCE OF 1036.32 FEET;

THENCE N00°16'31"W A DISTANCE OF 1801.43 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N26°34'03"W A DISTANCE OF 516.06 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N00°16'19"W A DISTANCE OF 38.70 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S89°41'19"W, A DISTANCE OF 751.63 FEET;

SAID STRIP OF LAND BEING 2356.19 FEET OR 142.79 RODS IN LENGTH, CONTAINING 1.623 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NW/4 983.31 L.F. 59.59 RODS 0.677 ACRES

NW/4 NW/4 1372.88 L.F. 83.20 RODS 0.946 ACRES

LATERAL 1 TO BORA BORA 13 CTB 1

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N42°12'16"W, A DISTANCE OF 1466.91 FEET;

THENCE N89°57'03"W A DISTANCE OF 99.27 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N39°12'02"W, A DISTANCE OF 1402.08 FEET;

SAID STRIP OF LAND BEING 99.27 FEET OR 6.02 RODS IN LENGTH, CONTAINING 0.068 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 99.27 L.F. 6.02 RODS 0.068 ACRES

LATERAL 2 TO BORA BORA 13 CTB 2

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S35°49'35"W, A DISTANCE OF 1663.50 FEET;

THENCE N89°59'59"E A DISTANCE OF 1198.27 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N00°00'05"W A DISTANCE OF 500.29 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°55'40"W A DISTANCE OF 50.02 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N31°58'09"E, A DISTANCE OF 947.87 FEET;

SAID STRIP OF LAND BEING 1748.58 FEET OR 105.97 RODS IN LENGTH, CONTAINING 1.204 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 338.32 L.F. 20.50 RODS 0.233 ACRES

NE/4 NW/4 1410.26 L.F. 85.47 RODS 0.971 ACRES

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 21 DAY OF JUNE 2018


FILIMON F. JARAMILLO, No. 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3344

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-7

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3344

SURVEY NO. 6298

ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 2, TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

LATERAL 3 TO BORA BORA 13 PAD 1

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N60°46'03"W, A DISTANCE OF 1126.28 FEET;
THENCE S89°43'39"W A DISTANCE OF 330.13 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N49°47'59"W, A DISTANCE OF 854.57 FEET;

SAID STRIP OF LAND BEING 330.13 FEET OR 20.01 RODS IN LENGTH, CONTAINING 0.227 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 330.13 LF. 20.01 RODS 0.227 ACRES

LATERAL 4 TO BORA BORA 13 PAD 2

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N60°46'03"W, A DISTANCE OF 1126.28 FEET;
THENCE N87°37'51"E A DISTANCE OF 702.26 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N60°39'03"E, A DISTANCE OF 1092.20 FEET;

SAID STRIP OF LAND BEING 702.26 FEET OR 42.56 RODS IN LENGTH, CONTAINING 0.484 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 338.42 LF. 20.51 RODS 0.233 ACRES
NE/4 NW/4 363.84 LF. 22.05 RODS 0.251 ACRES

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 21 DAY OF JUNE 2018.

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 3-7

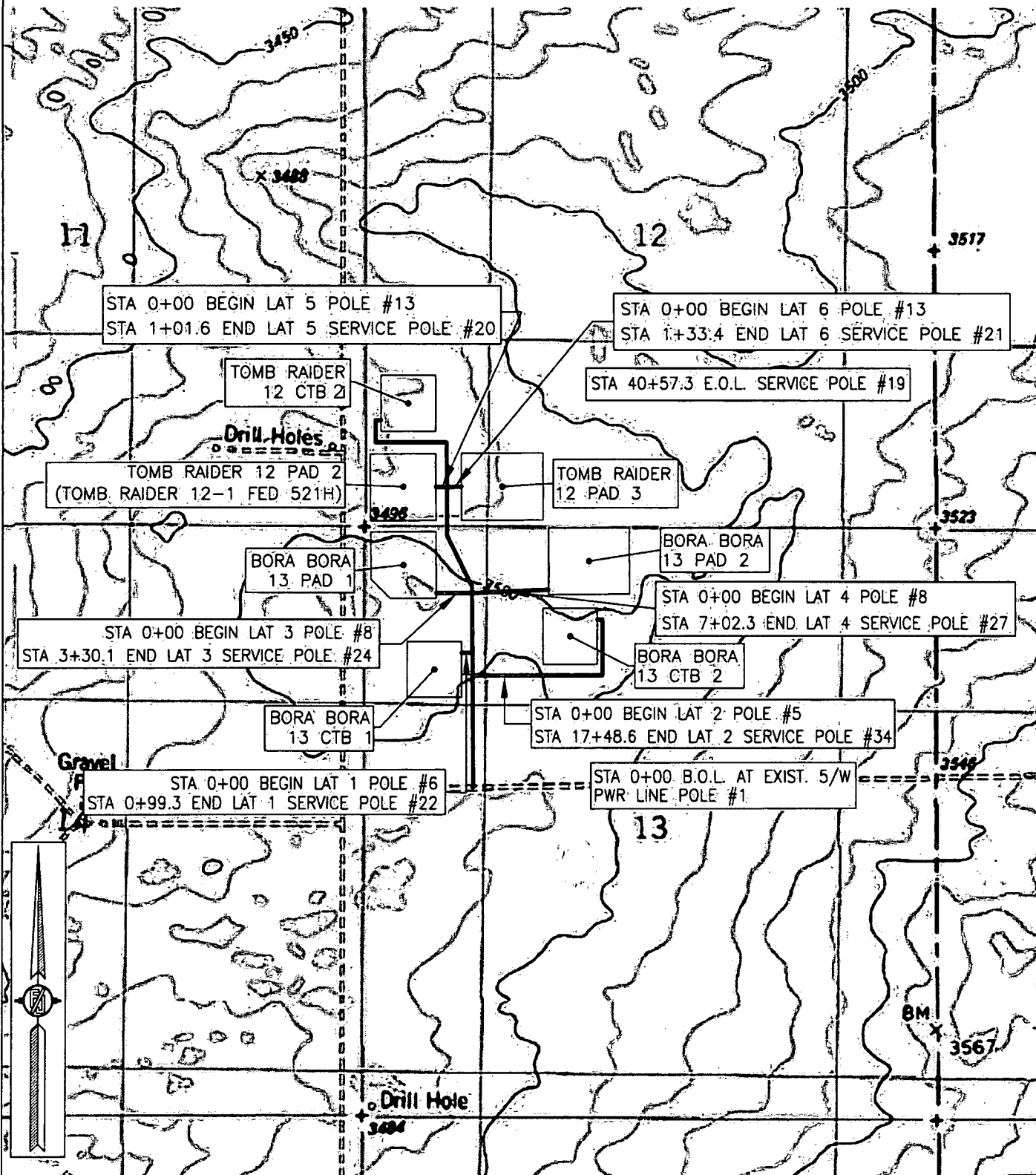
MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

SURVEY NO. 6298

ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 2, TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

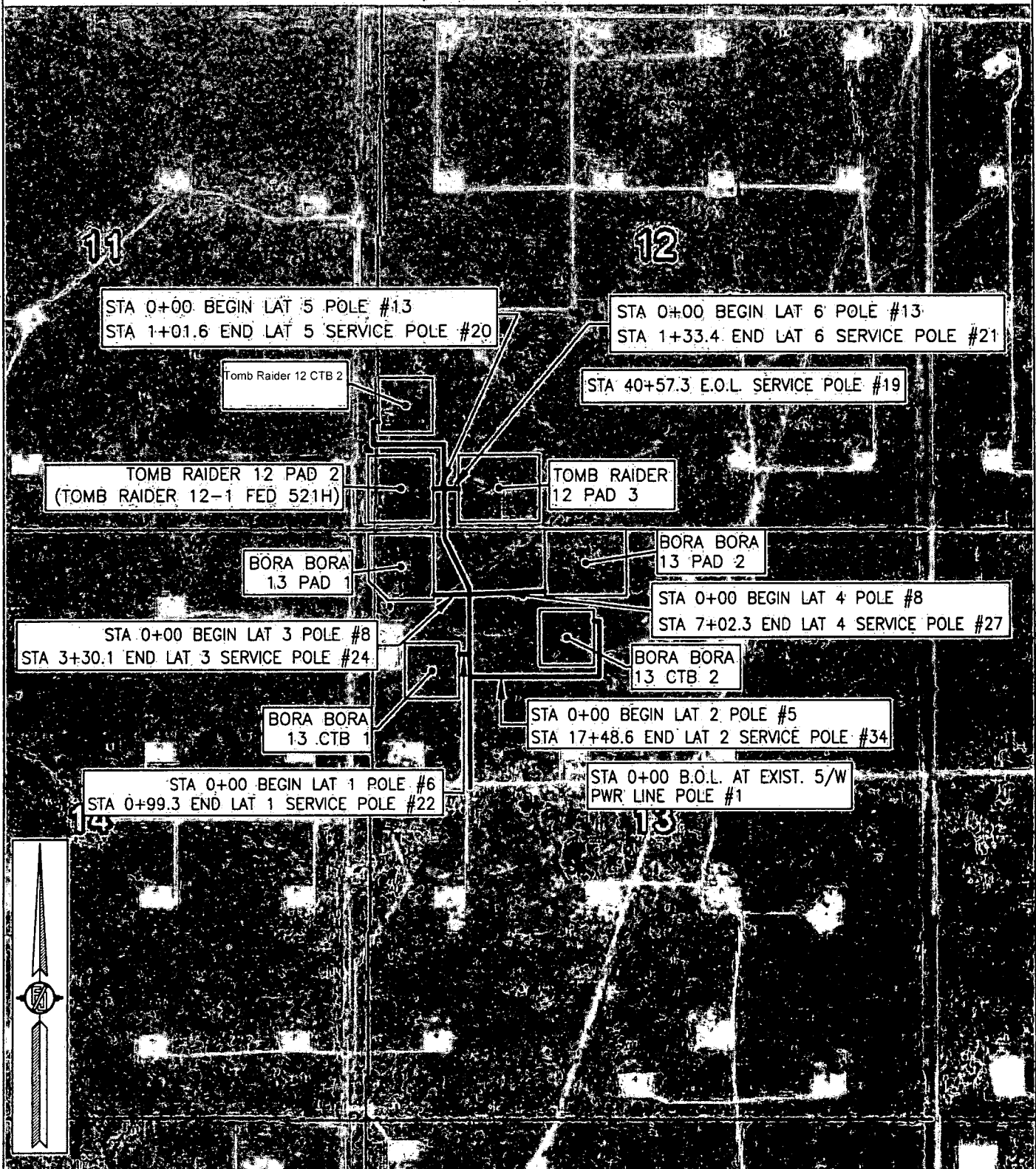
DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTIONS 13, 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018



ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 2, TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTIONS 13, 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018





Receipt

Tracking Information

Pay.gov Tracking ID: 26E449UE

Agency Tracking ID: 75636050260

Form Name: Bureau of Land Management (BLM) Application for Permit to Drill (APD) Fee

Application Name: BLM Oil and Gas Online Payment

Payment Information

Payment Type: Bank account (ACH)

Payment Amount: \$40,200.00

Transaction Date: 12/14/2018 02:25:59 PM EST

Payment Date: 12/17/2018

Company: DEVON ENERGY PRODUCTION CO., L.P.

APD IDs: 10400037332, 10400037323, 10400037318, 10400037314

Lease Numbers: NMNM022080, NMNM022080, NMNM022080, NMNM022080

Well Numbers: 611H, 731H, 701H, 331H

Note: You will need your Pay.gov Tracking ID to complete your APD transaction in AFMSS II. Please ensure you write this number down upon completion of payment.

Account Information

Account Holder Name: Devon Energy Production Company, L.P.

Routing Number: 061000052

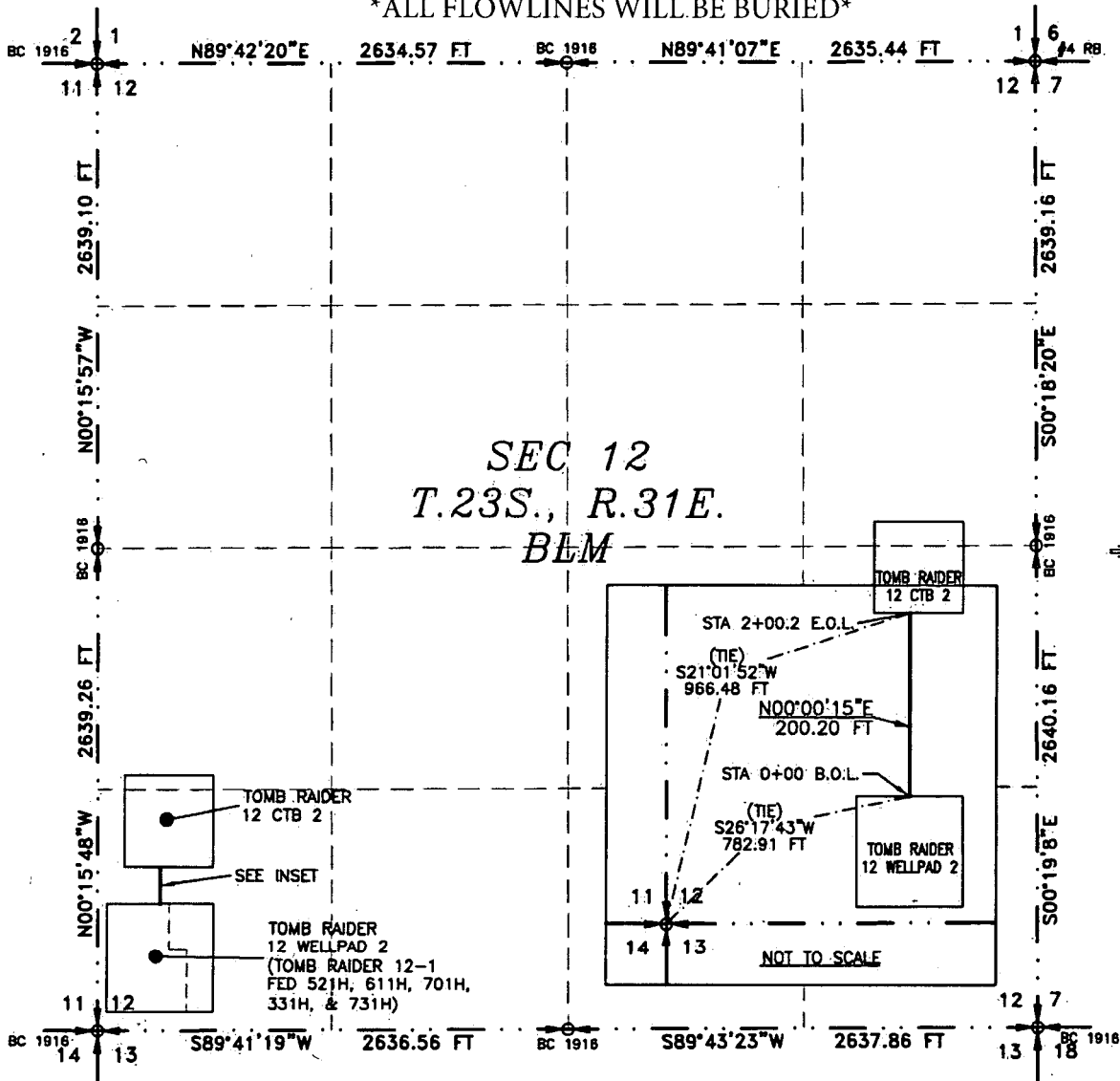
Account Number: *****9892

FLOWLINE PLAT

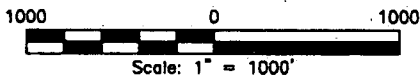
FIVE-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TOMB
RAIDER 12 WELLPAD 2 (TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H)
TO TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018

ALL FLOWLINES WILL BE BURIED



SEE NEXT SHEET (2-4) FOR DESCRIPTION



GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 15 DAY OF NOVEMBER, 2018

FILMON F. JARAMILLO, 12797
501 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SHEET: 1-4

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 6673

FLOWLINE PLAT

FIVE-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TOMB
RAIDER 12 WELLPAD 2 (TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H)
TO TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018
ALL FLOWLINES WILL BE BURIED

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S26°17'43"W, A DISTANCE OF 782.91 FEET;
THENCE N00°00'15"E A DISTANCE OF 200.20 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S21°01'52"W, A DISTANCE OF 966.48 FEET;

SAID STRIP OF LAND BEING 200.20 FEET OR 12.13 RODS IN LENGTH, CONTAINING 0.138 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4 200.20 L.F. 12.13 RODS 0.138 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-4

MADRON SURVEYING, INC.

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 7TH DAY OF NOVEMBER 2018

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

FILMON F. JARAMILLO, P.S. 12797

SURVEY NO. 6673

301 SOUTH CANAL
(575) 234-3341

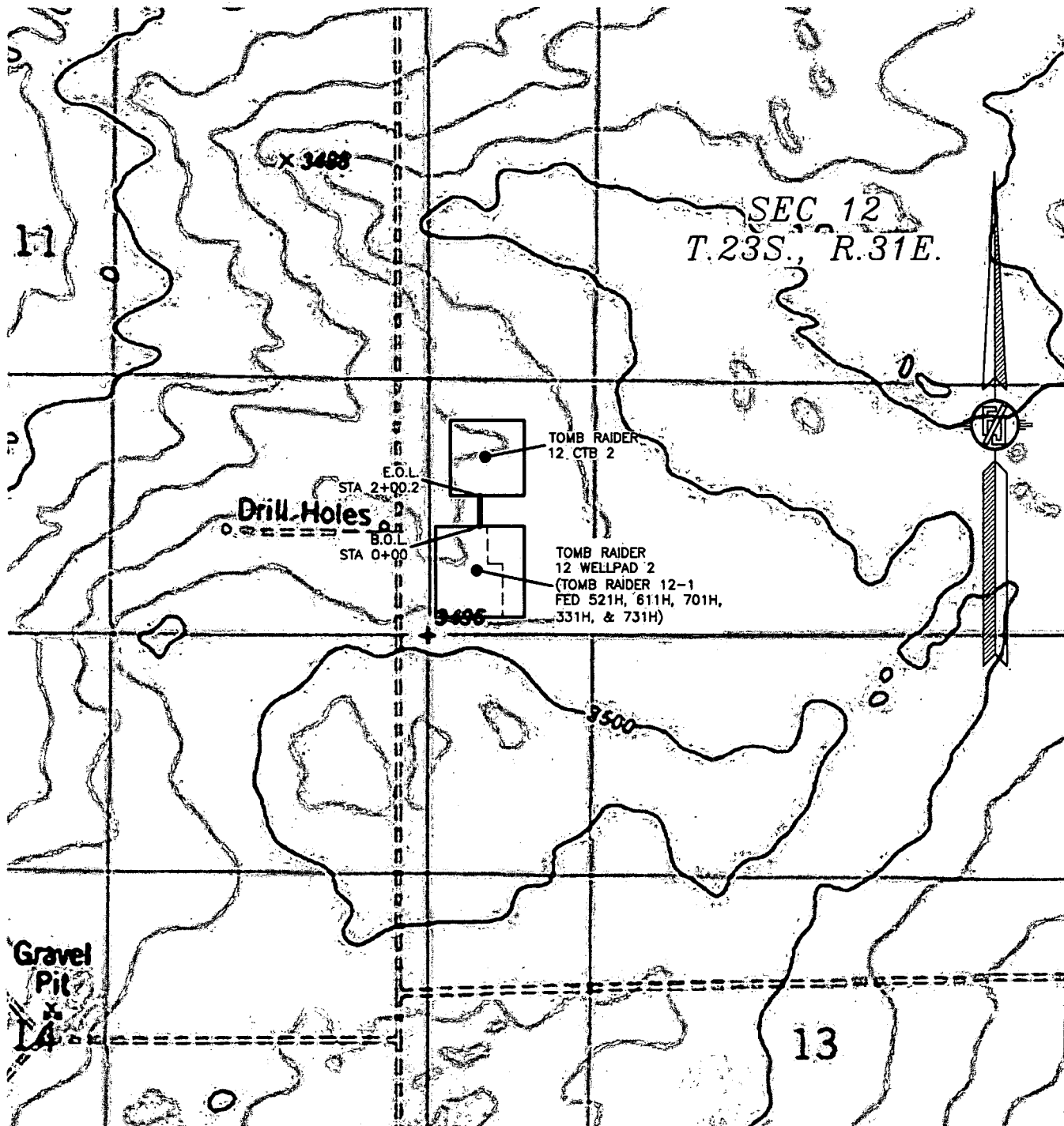
CARLSBAD, NEW MEXICO

FLOWLINE PLAT

FIVE-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TOMB
RAIDER 12 WELLPAD 2 (TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H)
TO TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018

ALL FLOWLINES WILL BE BURIED

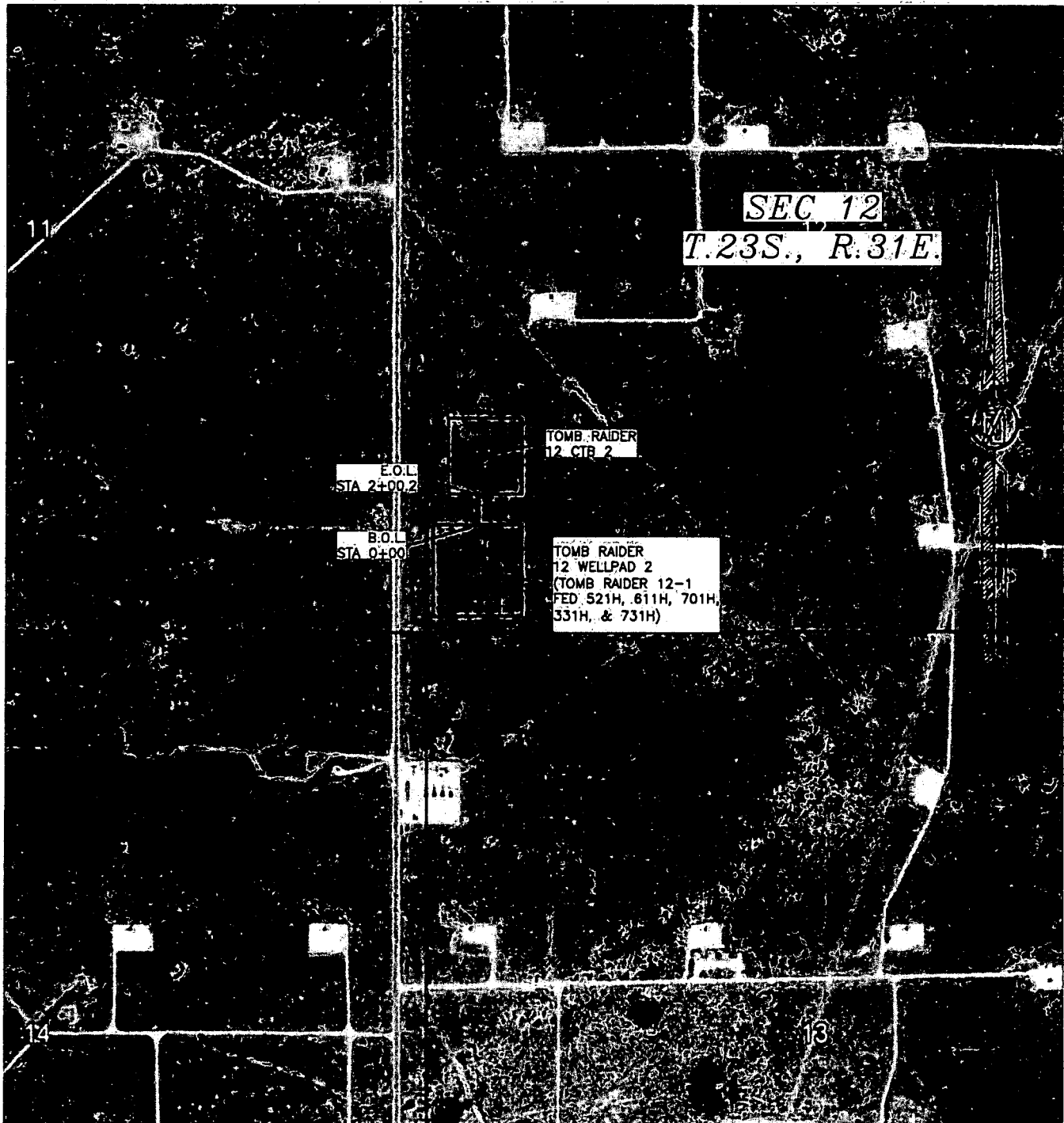


FLOWLINE PLAT

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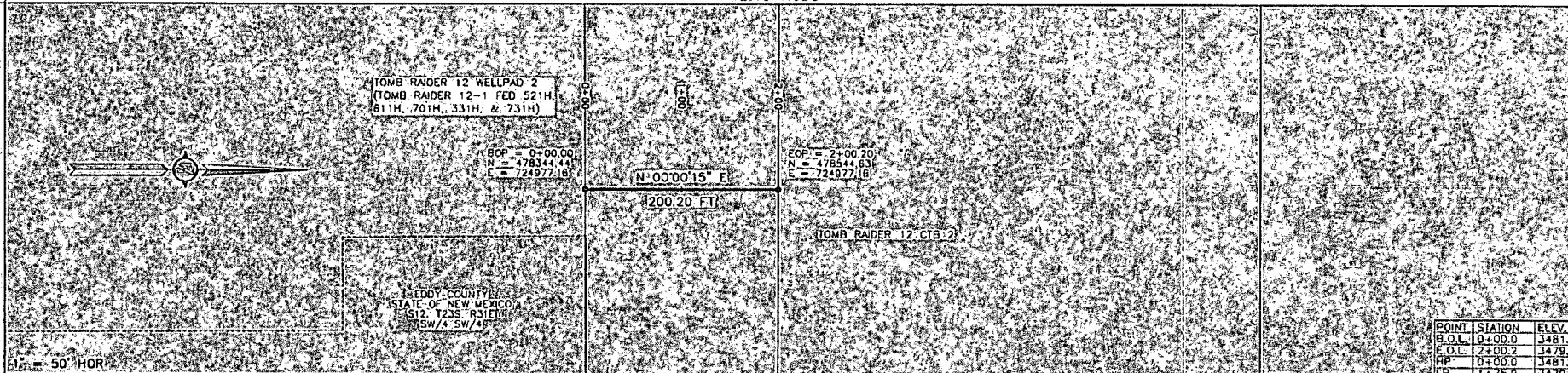
DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018

ALL FLOWLINES WILL BE BURIED

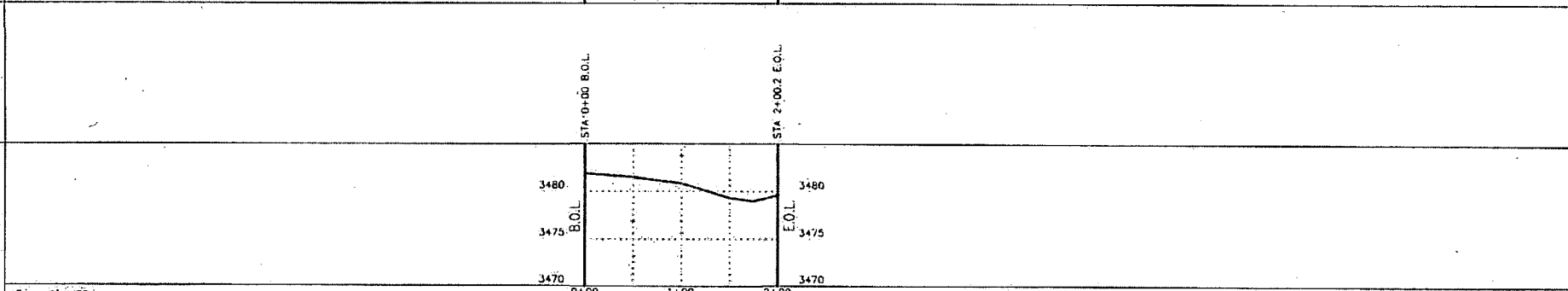


ALL FLOWLINES WILL BE BURIED

S12, T23S, R31E
EDDY COUNTY, STATE OF NEW MEXICO
BUREAU OF LAND MANAGEMENT LAND
200.20 L.F.
12.13 RODS.



POINT	STATION	ELEV.
B.O.L.	0+00.0	3481.9
E.O.L.	2+00.2	3479.7
HP	0+00.0	3481.9
TP	1+75.0	3475.0



PIPE SPECIFICATIONS AND TEST REQUIREMENTS										BILL OF MATERIAL		X-RAY REQUIREMENTS		RECORD		APPROVED FOR CONSTRUCTION		FIVE-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TOMB RAIDER 12 WELLPAD 2 (TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H) TO TOMB RAIDER 12 CTB 2	
FROM TO LN. FT. O.D. W.T. GRADE D.P. TEST PRESS. PSI TEST DUR. HR.												DEVON ENERGY NOVEMBER 6, 2018		NOVEMBER 6, 2018		DEVON ENERGY PRODUCTION COMPANY, L.P.		NOVEMBER 6, 2018	
CENTERLINE EASEMENT SECTION LINE QUARTER LINE EXISTING PIPELINE EXISTING POWER LINE EXISTING FENCE LINE 5' CONTOUR LINE												SCALE 1"=50'							

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

SURVEY NO. 6673
SHEET: 1-1



Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

05/30/2019

Bond Information

Federal/Indian APD: FED

BLM Bond number: CO1104

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: